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THE SHCHEKINO EXPERIMENT:
THE QUESTION OF CONTROL
OVER THE SOVIET INDUSTRIAL WORKFORCE.

ROBERT JOHN ARNOT

A thesis submitted for the degree of Doctor of
Philosophy to the Faculty of Social Sciences,
University of Glasgow.

AUGUST 1985

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ACKNOWLEDGEMENTS.

I would like to acknowledge the assistance I have received from the following:

- the SSRC, for a two year grant at the beginning of this work.

- my colleagues in the Department of Economics at Glasgow College of Technology, for enabling me to have one term of study leave in 1984.

- my supervisor, Hillel Ticktin, for both his continual assistance and support.

- my wife and daughter, Georgie and Julie Arnot, for their patience and support.

SUMMARY

This thesis seeks to provide an assessment of the Shchekino experiment and a number of other experimental initiatives which have been introduced into the USSR since the late sixties. The argument presented is that these initiatives represent the response of the Soviet ruling group to an inter-connected series of problems that have given rise to deteriorating economic performance and declining rates of economic growth. The cause of these problems is located in the antagonistic nature of the social relations of production in the USSR and the specific effects these relations have on the process of surplus extraction. It is argued that the Soviet ruling group attempted to assert control over the Soviet labour process, via these experimental initiatives. Their intention was to raise the rate of exploitation and thereby secure a growing relative surplus.

The thesis considers the specific experience of the Shchekino enterprise and offers an explanation for its initial successes that is different from both the usual western and Soviet interpretations. The explanation provided suggests that the experiment worked in the short-run because worker security was reduced. However, this explanation suggests that the experiment will have declining effectiveness over time at the individual enterprise.

The inability of the ruling group to successfully generalise the experiment is also considered. It is suggested that the reason for this is that the logic of the experiment is at odds with the principles of the planning mechanism and the implementation of the experiment ultimately undermines enterprise performance. Other experimental initiatives are considered which have attempted to introduce complementary changes. From a survey of the experience of these initiatives, it is suggested that a similar range of problems and pattern of growth and decline can be identified.

Finally, it is suggested that the experiments could only operate successfully if further complementary reforms were introduced. Specifically this would require the re-emergence of unemployment and a mechanism to unambiguously identify enterprise failure. As a consequence it is suggested that the experiments are not in the immediate interests of either enterprise management nor the industrial workforce. If this is the case then it calls into question the possibility of a transition to a market socialist solution for the Soviet economy.

INTRODUCTION

The aim of this thesis is to assess the operation of the Shchekino experiment. The intention is to evaluate the reasons for its implementation, its initial apparent successes, the attempted generalisation of the experiment, the number of variants that emerged and its overall impact upon the Soviet economy. The argument to be developed is that the problems facing the ruling group in the USSR in the 1960's necessitated, from their point of view, the implementation of a package of economic reforms and the Shchekino experiment was part of that general movement.(1) Moreover, it will be argued that the experiment was in fact a most important attempt at reform as it sought to resolve a central contradiction of the Soviet system. This will be elaborated upon in the first two chapters.

From 1965 onwards the general thrust of the reforms has been interpreted by western commentators as economic, (2) directed at specific problems connected with the efficiency of the resource allocation mechanism. Indeed, from Liberman's articles onwards (3), the belief, shared by both western pro-market reform economists and their Soviet counterparts (4), was that by resolving microeconomic inefficiencies a way could be found to resolve the macroeconomic problems, specifically the decline in economic growth. This was to be achieved by the technical

manipulation of the 'mix' between planning and the role of market forces. The effort was directed particularly at the relationships between enterprises, ministries and central planners and between enterprises themselves. This was seen to be particularly important in the face of growing consumer demands and discontent and the increasing resource needs of industrial, space and military sectors. If a renewal of high growth rates could be achieved then the ruling group would be able to assuage domestic discontent and maintain and reproduce their own socio-economic position.

However, this is a partial view of the problems which cannot be described simply as technical and economic, amenable to resolution through better systems of material supply or more elaborate incentive systems but socio-economic and systemic. The argument to be developed is that the nature of the Soviet society and economy makes it necessary for the Soviet ruling group to adopt piece-meal, market orientated reforms in an attempt to gain some control and predictability over the magnitude and quality of the socially produced surplus. The process of surplus extraction is not regulated and equilibrated in the same way as the labour process under the capitalist mode of production but is subject to its own contradictory dynamics. As a consequence the ruling group has sought to assert control over the labour process and the Shchekino experiment and a number of other experimental initiatives,

are part of their attempt to control the Soviet industrial workforce. Whilst this thesis is primarily focused on the Shchekino experiment a number of the other experimental initiatives, particularly the brigade form of labour organisation, will be outlined and evaluated.

It will be argued however, that the antagonisms and contradictions that make these initiatives necessary for the ruling group also modify and eventually undermine such attempted experimentation. Furthermore, it will be suggested that the failure of these experimental initiatives illustrates the impossibility of grafting piece-meal market reforms onto the Soviet economy because it is no more regulated by the law of value than it is regulated by the law of planning. The central reason for this is that market relations are not simply technical relations, parts of which can be accepted or rejected at will as some authors suggest (5), but are expressions of the underlying social relations of production of particular modes of production. The consequence is that an economy unregulated by the law of value will of necessity reject partial market reforms unless the whole social relations of production are changed. In the Soviet instance this would imply the restoration of capitalism, the whole panoply of market forms and the complete reintegration of the Soviet economy into the world market and the world division of labour. In order to explain this, it will be necessary to outline a preliminary view of the political economy of the

USSR and place the pressure for reforms, like the Shchekino experiment and the brigade system, into some form of context. This will serve a twofold purpose of explaining the centrality of these experiments and secondly, it will provide a theoretical perspective for the thesis. The adequacy of the political economy provided can be gauged by its ability to explain and evaluate the latter sections on the Shchekino experiment, the brigade system and the other experimental initiatives.

The early chapters seek to establish a conceptual framework, based upon contemporary socio-economic problems, which can then be elucidated further by a consideration of the experimental initiatives. The motivation for this approach is that the theory, based upon some empirical knowledge, can be developed through application to more specific questions (6). This approach seeks to avoid the mechanical transposition of a particular theoretical viewpoint onto the Soviet Union, so common within both western Marxist and more orthodox writings on the USSR (7). It is insufficient to develop either theoretical formulations in isolation from the empirical realities of the USSR (8), or to produce empirical material for its own sake (9). Attitudes towards these fundamental questions of political economy colour all academic work and whilst this thesis does not intend to tread the well-worn path of comparing and criticising the various theoretical perspectives on the USSR, initially it is necessary to

outline theoretical and conceptual origins.

The conceptual basis of the thesis reflects three particular theoretical trends. Firstly, it reflects the work that has accompanied the resurgence of interest in the capitalist labour process evident over the last decade (10). The argument being that these debates have provided theoretical insights in their analysis of capitalism that allow a significant comparison to be made with the Soviet Union and provide the basis, with suitable adaptation, for understanding the Soviet labour process. Writers in this tradition have had little to say on the Soviet Union and when they have, it has been coloured by their superficial knowledge of the political economy of that system. For example Braverman argues, "that the organisation of labour in the Soviet Union differs little from the organisation of labour in capitalist countries" (11). On one level the surface phenomena are supportative of this conclusion; the replication of the technical division of labour experienced under capitalism, the hierarchical nature of factory relations, similar forms of payment by time and by piece, etc., could all be said to lead to such a conclusion. However, a hierarchically structured, technical division of labour also existed during the building of the pyramids but this would in no way lead Braverman and others, to conclude that this is evidence of the existence of capitalism. Yet this is precisely the type of conclusion they draw with respect to the USSR. It is not solely the appearance of

these similar elements that is significant but it is their interaction within the political economy of the USSR that defines the specific nature of that system and it is the specific nature of the USSR that invests these apparent similarities with their unique properties.

Secondly, the thesis rests heavily on the theoretical work connected with the journal Critique and particularly the work of H.H.Ticktin (12). The argument to be developed is that the methodology of Marxist political economy can provide the basis for understanding non-capitalist social formations. This differs from the view adopted by more orthodox western academics who argue, usually on the basis of an inadequate appreciation of the methodology of Marxist political economy, that it has no explanatory value in the context of the USSR (13). Finally, the view adopted throughout, is that aspects of reality are impossible to comprehend within the watertight boundaries of academic disciplines. Consequently, the false divide between the economic, the political and the sociological, as much in evidence in Soviet academic work as in western, is avoided.

The thesis can be sub-divided into three parts. The first part, is comprised of two chapters. The first of which considers the general methodological problem of explaining the political economy of any socio-economic system and outlines the salient features of the capitalist mode of production in order to evaluate the peculiarities of the

USSR. The second chapter presents a critique of Soviet and western functionalist views of the political economy of labour and work in the USSR, before proceeding to outline an alternative political economy, based upon existing socio-economic problems. This provides an explanation of the motivation for the implementation of the Shchekino experiment, its variants and the parallel experiments it spawned.

The second part of the thesis is also comprised of two chapters. The first of which reassesses the early years of the Shchekino experiment, outlining the initial operation of the experiment and presenting an idealised model of its operation. The initial results of the experiment are reconsidered and an alternative explanation for these results is presented. The chapter also includes an account of the variants adopted at a number of locations, which sought to resolve specific problems in the operation of the experiment, and the problems they encountered. The second chapter in this section considers the attempts to generalise the experiment and the problems encountered both at the level of the plant itself and within the context of the economy as a whole. It also deals with the criticisms levelled at the experiment by Soviet commentators and details the attempts made by the ruling group to reinvigorate the experiment by legislative changes.

The third part of the thesis, is comprised of two chapters.

The first of which deals with a number of alternative experimental initiatives introduced by the ruling group, particularly the brigade form of labour organisation. It traces its introduction into the construction industry and the attempts to generalise it throughout Soviet industry. The chapter also considers the experiments at the Aksai, Dinamo and Volga plants. The final chapter attempts to draw conclusions from the material presented with regard to the likely future prospects for these and other experimental initiatives and the overall possibilities for reform and change.

FOOTNOTES TO INTRODUCTION.

1. There is a vast literature on the economic reforms of the early sixties. For a standard Soviet account see, "Khozyaistvennaya reforma v SSSR", Moscow, 1969. For a comprehensive western summary of the debates and the literature see P.R.Gregory and R.C.Stuart, "Soviet Economic Structure and Performance", New York 1981, pp.294-321.

2. For Berliner for example, the 1965 Reform was the first reform in which economists rather than planners and politicians had a hand. J.S.Berliner, "Planning and Management", in "The Soviet Economy Toward the Year 2000", A.Bergson and H.Levine (Eds), London 1983, p.353.

3. Liberman's articles in Pravda, 7th September 1962 and 20th September 1964, are reproduced along with some of the replies they generated in, "Planning, Profit and Incentives in the USSR", New York, 1966.

4. See for example, A.Nove, "The Soviet Economic System", London 1980, pp.325-327.

5. See W.Brus, "Is Market Socialism Possible or Necessary?", Critique, No.14, 1981, pp.22-26.

6. See K.Marx, "The Grundrisse", London 1973, pp.100-108 for a discussion of the methodology of political economy.

7. For an example of the former see P.Binns and M.Haynes, "New Theories of Eastern European Class Societies", International Socialism, 1980, No.7, pp.18-50, where they manage to identify a tendency for the rate of profit to fall in the USSR. As an example of the latter, see T.Buck, "Comparative Industrial Systems", London, 1982 where a neo-classical framework is used to analyse Soviet enterprises hence abstracting the enterprise from its unique social context.

8. P.Corrigan, H.Ramsey and D.Sayer, "Bolshevism in the USSR", New Left Review, Jan-Feb 1981, No.125 is a good example of this tendency.

9. R.Clarke, "Soviet Economic Facts", London, 1984, being the most extreme example.

10. P.Thompson, "The Nature of Work", London 1984, provides an introduction to this work. The most important contributions are; H.Braverman, "Labour and Monopoly Capital", New York, 1974; T.Nichols, "Capital and Labour", Glasgow, 1980; T.Nichols and P.Armstrong, "Workers Divided", Glasgow, 1976; A.L.Friedman, "Industry and Labour", London, 1977; J.S.Storey, "Managerial Prerogative and the Question of Control", London, 1983; "The Labour

Process and Class Strategies", CSE (Ed), London, 1976.

11. Braverman, op.cit., p.14. A similar perspective can be found in the work of I.Wallerstein and A.G.Frank. See I.Wallerstein, "The Capitalist World Economy", Cambridge, 1979 and any of Frank's numerous works on the International Crisis.

12. H.H.Ticktin, "Towards a Political Economy of the USSR", Critique, No.1, 1973; "The Contradictions of Soviet Society and Professor Bettelheim", Critique, No.6, 1976; "The Class Structure of the USSR and the Elite", Critique, No.9, 1978.

13. See J.S.Berliner, "Marx on Economics", Problems of Communism, No.5, 1964.

CHAPTER 1: THE SURPLUS AND CLASS STRUCTURE.

The aim of political economy is to explain the predominant mode of production within the socio-economic system under consideration; to explain how it has developed, how it presently functions and how it may develop in the future. It is therefore, an attempt to comprehend a dynamic process which is neither finished nor static but characterised by motion and change. Furthermore, the subject matter is often contradictory and complex, with superficial similarities to other periods of time and other social systems. It is for this reason that the mechanical transposition of categories from one social system to another, on the basis of little or one-sided empirical knowledge, as already noted, is doomed to failure (1). However, there are elements of methodology which are ahistorical and applicable to all epochs and from a Marxist perspective the key to understanding the nature of the social system and its mode of production is the socially produced surplus (2). This is based upon the notion that purposive human activity, particularly when carried out in co-operation with others, acts upon nature and can produce more than is necessary to simply reproduce human life (3). Marx identifies as a consequence, a division within labour time between necessary labour (necessary labour time), i.e. that labour socially necessary to reproduce the direct producer, and surplus labour (surplus labour time), i.e.

labour over and above necessary labour, when the direct producer produces not for himself but for another or others (4). This idea of a socially produced surplus, based upon surplus labour time, is therefore, according to Marx, a non-historical category (5).

"Capital has not invented surplus labour. Wherever a part of society possesses the monopoly of the means of production, the labourer, free or not free, must add to the working time necessary for his own maintenance an extra working time in order to produce the means of subsistence for the owners of the means of production...." (6).

The basic antagonistic relationship therefore, in any hierarchically structured social system, is between the direct producers of the surplus and the controllers of the surplus once extracted. This relationship is fundamental to all hitherto known class societies. However, the actual form of surplus extraction will differ between different historical modes of production.

"The essential difference between the various economic forms of society, between for instance, a society based upon slave labour, and one based upon wage labour, lies only in the mode in which this surplus labour is in each case extracted from the actual producer, the labourer" (7).

The nature of the extraction of the surplus will provide the general contours of the social system, its class structure.

"The specific economic form, in which unpaid surplus labour is pumped out of direct producers, determines the relationship of rulers and ruled, as it grows directly out of production itself, and in turn, reacts upon it as a determining element" (8).

For example, in societies based upon slavery the extraction of the surplus is direct and unfetishised, because the direct producers are the property of the class of owners and function simply as an instrument of production (9). The surplus is extracted in a relationship ultimately based upon force and the class structure can be identified around this process, slave and non-slave. As Marx points out, it appears as if the whole of the slave's labour is unpaid work for the master and the onus is on the master to provide for the slave's reproduction (10). The relationship is one of complete dependency. In the end any slave failing to fulfil his or her economic function can simply be disposed of and replaced, as well as being subject to barbarous conditions whilst working (11).

Under feudalism the nature of the surplus extraction process changes but is still direct and non-fetishised

(12). As Marx suggests under feudalism,

"... we find everyone dependent, serfs and lords, vassals and suzerains, laymen and clergy. Personal dependence characterises the social relations of production..." (13).

Here the surplus is extracted via the medium of compulsory labour where the dependent labourer can clearly identify the surplus labour time and can be certain of its magnitude, i.e. that time expended working for the owner of land (whether Lord or clergy), and necessary labour time, i.e. that spent reproducing his own existence. There has developed a degree of independence within the surplus extraction process, which may even allow the labourer to generate a surplus of his own but which is ultimately dependent upon his relationship with his master (14). This does differentiate the serf from the slave, but ultimately however, both slave and serf labour can be viewed as "an inorganic condition of production" (15) and subject to the ultimate sanction of force to maintain their position in the surplus extraction process. It is only with the onset of the capitalist mode of production that these relationships are fundamentally changed.

Under the capitalist mode of production the question of the surplus is more veiled than under previous modes of production. Capitalism relies not upon relationships of dependency but on particular forms of non-dependency, or

freedoms.

"....the economic structure of capitalist society has grown out of the economic structure of feudal society. The dissolution of the latter set free the elements of the former...." (16).

Free labourers, as Marx points out, are free in a double sense (17). They are no longer part of the means of production (as slaves and serfs were) but equally they do not own their own means of production. Their freedom from the fetters of feudalism also frees them from, "all the guarantees of existence afforded by the old feudal arrangements" (18). Consequently, capitalism ends dependency, custom and external extra-economic force as arbiters in the surplus extraction process, but it does not end that process itself, simply transforms it, "replacing feudal exploitation with capitalist exploitation" (19).

The free labourer, who is no longer an element of production in himself, is equally unable to make his labour concrete either in use-values to guarantee his own existence or in commodities to sell. As a consequence to maintain his daily existence he is forced, (not by custom or direct force but by economic necessity), to sell the one commodity which he possesses, his capacity to work or labour power. This is sold to the owners of the means of production, for a specified period of time in a freely

contracted exchange (20).

"The historical conditions of its (capital's) existence are by no means given with the mere circulation of money and commodities. It can spring to life only when the owner of the means of production and subsistence meets in the market with the free labourer selling his labour power" (21).

Labour power however, is a peculiar commodity. It has an exchange value, determined by the socially necessary labour-time needed for its production and reproduction but its use-value to the capitalist is its capacity to produce a surplus.

"...the value of labour power and the value that labour power creates in the labour process, are two entirely different magnitudes; and this difference of the two values was what the capitalist had in view, when he was purchasing the labour power" (22).

In other words, the capitalist mode of production provides an economic motivation to both worker and capitalist. For one, necessity born out of freedom provides the impetus for alienated labour. For the other the desire to accumulate surplus value and capital is equally a necessity because failure to do so threatens the individual capitalist's existence as an independent unit of capital (23). The capitalist labour process is not simply a process through

which man acts upon nature to produce use-values but it is a process of surplus extraction. Within the freely contracted wage relationship between worker and capitalist, (which ironically is an absolute necessity for both parties), an unpaid surplus is extracted. The major difference between this and the previous forms of the surplus extraction process is that what was once open and obvious is now veiled in the apparent exchange of equivalents. As Rubin points out,

"the theory of fetishism is, per se, the basis of Marx's entire economic system and in particular his theory of value" (24).

What is being suggested therefore, is that the mode of surplus extraction conditions the class structure of any social system but at one and the same time those class relations affect the nature and magnitude of the surplus. They are both determined and determining and interpenetrate one another. This is just as much the case for feudal or slave based societies as it is for capitalism. This forms the specific political economy of any mode of production and can be elaborated on a number of levels.

Firstly, analysis at the level of the most basic economic relationship, within the labour process itself, identifying the manner in which the surplus is extracted from the direct producers and the strategies adopted by the

controllers of the means of production. Under capitalism this would consist of analysis of the individual capitalist firm (25). What needs to be explained is why, when the productive capacities of capitalism have been so massively advanced by capitalism's necessary conquest of science and technology (26), the potential for production far outstrips actual production (27).

Firstly, this is because production is social but the surplus is appropriated individually by the owners of the means of production, and conflict is generated. This conflict manifests itself both in a reduction of actual production (28) and a lack of interest on behalf of the work force in enhancing production capacities on the basis of their own initiative (29). Secondly, this necessitates the employment of a whole section of the employable population in activities of supervision and control, which whilst they are functional to the class of owners are not directly socially productive (30). The purchase of labour power after all, only gives the purchaser the possibility of extracting a surplus. Once purchased for the specific period of time that potentiality has to be turned into a reality. As Braverman suggests,

"Under the special and new relations of capitalism, which presuppose a free labour contract, they (capitalists) had to extract from their employees that daily conduct which would best serve their interests, to impose their will upon

workers whilst operating a labour process on a voluntary contractual basis" (31).

Consequently, "the capitalist strives through management to control" (32). This necessitates the employment of foremen, overseers and layers of management responsible for control functions whose job it is to see that an actual surplus is produced within the labour process. Furthermore, the volume of the surplus will be affected by the ability of the direct producers to resist these attempts at control and to assert their own forms of negative control on the labour process (33). This activity is the rational response of the labourer seeking either to minimise his participation in a necessary but alien system of surplus extraction or simply trying to make tolerable the conditions under which this surplus is extracted (34). The forms this negative control may take can be individualised or collective, conscious and co-ordinated or unconscious and spontaneous, the end result is the same a reduction in the surplus extracted by the capitalist (35). In other words the class structure of capitalism generates conflict that conditions the surplus extracted at the level of the individual firm and provides the objective basis of class struggle. This means the day-to-day struggle around production and not just its periodic manifestation in strikes, occupations, sit-ins, etc. (36).

From the point of view of the individual capitalist this necessitates a series of strategies which seek to limit the degree of negative control exerted by the working class. It seems futile to argue that any one strategy is the embodiment of capitalist rationality as different strategies will predominate at different moments in time and different strategies can co-exist both within different sectors of the economy and even within the same firm (37). It is more likely that the individual capitalist will adopt the appropriate strategy in differing circumstances, depending upon a series of features; the type of production (batch or continuous flow), the level of technology, the level of worker organisation and the sophistication of worker responses, the degree of necessary autonomous initiative, the market conditions that the individual firm faces. All these features will interact to produce the specific strategy. Presumably a firm operating in a market characterised by restricted competition, in a period of full employment, will be able to adopt different strategies to a firm in a strongly competitive market, in a period when there exists a significant reserve army of labour. This has to be qualified as it cannot be assumed that the choice of strategy is always correct nor does it assume that the range of choices is limitless. The reason for this latter point is that the struggle over the generation and control over the surplus manifests itself not only at the level of the individual capitalist's relationship with his own workforce, (i.e. around the labour process) but also at

the level of the class relationship between the capitalist class and the working class and within different fractions of the capitalist class itself. This critically revolves around the question of competition, labour productivity and the internal discipline of the capitalist mode of production (38). It is to be argued that the form these elements take under capitalism in comparison to their form in the USSR, is the key to understanding the specific socio-economic nature of the latter.

In a capitalist economy changes in the productiveness of social labour play an important role in the generation of the surplus. Obviously increases in the amount of time spent at work or increases in the employed workforce will facilitate an increase in the absolute level of the surplus (39). The physical volume of goods produced will increase but with a concomitant increase in expenditures of human labour time. However, increases in social labour productivity will lead to an increase in the relative surplus generated (40). That is the given amount of labour time expended now produces either a larger volume of products or more complex, higher quality products. The end result is that the necessary labour time decreases and the surplus labour time increases, in the production of any specific product and consequently the volume of surplus value also increases. For the individual capitalist, increases in the productiveness of the labour power he purchases, strengthens his position relative to his

competitors. As the value of a commodity produced, under capitalist conditions, tends towards the average socially necessary labour time needed for its production, the capitalist experiences a temporary competitive advantage which, all other things remaining equal, results in increased profits. These profits may enable the individual capitalist to further revolutionise the productive process, hence gaining further competitive advantage as the more efficient producer expands at the expense of the less efficient competitor or may allow for the takeover of the latter by the former. From the point of view of the individual capitalist therefore, there are real advantages in attempting to raise labour productivity even if the short term gains are eroded as competitors equal or surpass their example (41).

However, the pressure to increase productivity is not something the individual capitalist firm can choose to ignore because for capitalist firms as a whole this process acts as an external compulsion upon all to keep up with the most advanced and seek to surpass them. The reason for this is that labour expended over and above the average socially necessary in the production of any commodity is lost and creates no value (42). Consequently, the capitalist failing to revolutionise his productive process will be at a competitive disadvantage. For the individual capitalist his very existence as a capitalist may well be jeopardised if he fails to continually revolutionise production and

continually raise the productivity of labour.

From the point of view of control over the surplus and over the labour process itself, the development of labour productivity has a number of ramifications. Firstly, it leads to a cheapening of labour power, in value terms, since the socially determined necessities can now be produced with a smaller input of labour time and consequently at a lower value. As the value of labour power is determined by the average socially necessary labour time for its reproduction this implies an increase in the surplus available for the capitalist. Secondly, the continual necessity to increase labour productivity leads to an ever widening use of technology and science to improve constant capital and leads to the expulsion of labour from the labour process (43). The creation of a reserve army of labour further depresses the value of labour power, as it acts to reduce the resistance of labour individually and weakens the organised response of labour thus improving the profitability of both the individual capitalist and the capitalist class (44). Thirdly, the implementation of new technologies changes both the nature of labour itself and its organisation. For Braverman, this implied the deskilling and degradation of work under capitalism and the gradual erosion of control exercised by the skilled working class (45). For his numerous critics Braverman's notion is overly romantic but all nevertheless, recognise the changing nature of the

capitalist labour process under the influence of technological change has implications for the question of control (46).

As Marx points out, this process is racked by its own internal contradictions which stem from the antagonistic relationships at its core and which precipitate wasteful expenditures, idle resources, unemployment and periodic crises. Nevertheless, capitalism's ability to increase the productiveness of labour and to accelerate its socialisation is seen as its great progressive function providing the motive force for the system's development and eventually creating the basis for its overthrow (47).

What is being suggested is that under the capitalist mode of production, increases in labour productivity yield benefits that accrue to the individual capitalist firm and also to the class as a whole, hence both have an interest in raising labour productivity. For the working class the situation is more complex. As a class they can have no interest or incentive to improve labour productivity if it results in the cheapening of labour power and a rise in unemployment. However, in so far as the working class can be segmented and groups and individuals within the class differentiated, monetary inducements can lessen the resistance to such schemes (48). The reason for this is that money, acting as the universal equivalent, will provide access to consumption goods and services and the

consequent fragmentation of the working class will further weaken collective resistance and increase profitability (49). Ironically, the present phase of capitalist development produces pressures that simultaneously homogenise the working class and fragment it (50).

For the classical writers in the Marxist tradition, the contradictions inherent in the capitalist process of development, act as fetters upon the further revolutionising of social productivity which is only possible under socialism (51). A massive growth in labour productivity should be possible because advances no longer accrue to owners of capital, but to the direct producers removing the central contradiction. As Lenin argued,

"The communist organisation of social labour, the first step towards which is socialism, rests, and will do so more and more, as time goes on, on the free and conscious discipline of the working people who have thrown off the yoke both of the landowners and the capitalist" (52).

The working class would now have a direct material stake in measures designed to improve productivity as these will potentially reduce the amount of labour time to be expended and not result in unemployment, increased rates of exploitation and fragmentation of the working class but in

increased leisure or increased material consumption or some combination of both. If this linkage is made and working class interests are directly stimulated then the vast productive and creative potential of the direct producers can be released. Resistance to new technology would be irrational and disappear as the gains of science and new technology will be available to all and their development encouraged. For Lenin technological progress under socialism will,

"... make working conditions more hygienic, will free millions of workers from smoke, dust and dirt and accelerate the transformation of dirty repulsive workshops into bright laboratories worthy of human beings" (53).

Lenin was clear on the potential of this released force,

"Capitalism can be utterly vanquished by socialism creating a new much higher productivity of labour.....communism is the higher productivity of labour compared to that existing under capitalism of voluntary, class conscious and united workers employing advanced techniques" (54).

Once labour power is no longer sold as a commodity and the law of value no longer operates as the regulator of the socio-economic system, use values will be produced directly as the needs of the freely associated direct producers develop and not as profitability dictates. The replacement

of the anarchy of capitalism will further destroy a whole host of socially useless functions and occupations thus further resources can be drawn into social production. Classical Marxist writers, saw the eventual outcome of this process, fueled by the ever increasing productivity of human labour, as material abundance where the division of labour could be overcome and class antagonisms eliminated (55).

The analysis provided in this section raises a series of questions with regard to the USSR. What form does the process of surplus extraction take? Who controls the socially generated surplus? What are the class relations that derive from this process? How do these relations condition the surplus and what form does it take? What dynamic or laws of motion govern the operation of the Soviet economy? How do units (enterprises) within the surplus extraction process interrelate? To what extent is the process different from that operating under capitalism? The second chapter takes up these questions.

FOOTNOTES TO CHAPTER 1.

1. See Haynes and Binns op.cit.
2. K.Marx, "The Grundrisse", London 1983, p.85.
3. K.Marx, "Capital", Vol.1, London 1977, p.315 and K.Marx, "Capital", Vol.3, London 1977, p.818.
4. Marx, Vol.1, op.cit., pp.208-209.
5. Marx, Vol.3, op.cit., p.819.
6. Marx, Vol.1, op.cit., p.226.
7. Marx, Vol.1, op.cit., p.209. This is not to suggest that all human history can be reduced to a simple progression through predetermined stages. As Meikle has pointed out, reality is more complex and past and present forms can coexist. This necessarily brief account also leaves aside the much debated question of the transition. See S.Meikle, "Marxism and the Necessity of Essentialism", Critique, No.16, 1983, pp.151-153.
8. Marx, Vol.3, op.cit., p.791.
9. Marx, Vol.1, op.cit., p.191; "Grundrisse", op.cit., p.98 and p.489.
10. Marx, Vol.1, op.cit., p.505.
11. Marx, Vol.1, op.cit., pp.253-254.
12. Marx, Vol.1, op.cit., p.82.
13. Marx, Vol.1, op.cit., p.81.
14. Marx, Vol.3, op.cit., p.790.
15. Marx, "Grundrisse", op.cit., p.489.
16. Marx, Vol.1, op.cit., p.668.
17. Marx, Vol.1, op.cit., p.166.
18. Marx, Vol.1, op.cit., p.669.
19. Marx, Vol.1, op.cit., p.669.
20. Marx, Vol.1, op.cit., p.165.
21. Marx, Vol.1, op.cit., p.167.
22. Marx, Vol.1, op.cit., p.188.

23. Marx, Vol.1, op.cit., p.257 and 302.

24. I.I.Rubin, "Essays on Marx's Theory of Value", Detroit, 1972, p.5. As Perlman points out in his introduction the theory of value is essentially about the "regulation of labour" (p.xxix).

25. See for example, T.Nichols and H.Beynon, "Living With Capitalism", London, 1977, and H.Beynon, "Working For Ford", London, 1973.

26. For an analysis of the role of science under the capitalist mode of production see, "The Political Economy of Science", H.Rose and S.Rose (Eds), particularly Chaps.2,3,5, and also Braverman op.cit., pp.155-167.

27. See P.Baran, "The Political Economy of Growth", London, 1957, pp.133-134.

28. This was precisely the aim of Taylor's scientific management, to break the 'systematic soldiering' of the workforce whereby workplace and output are deliberately reduced. See F.W.Taylor, "The Principles of Scientific Management", New York, 1947, p.19.

29. See P.Dubois, "Sabotage in Industry", London, 1979, p.51.

30. As Marx points out capitalism generates "a vast number of employments, at present indispensable but in themselves superfluous". This is seen as a consequence of the anarchic nature of capitalism. Marx, Vol.1, op.cit., p.496.

31. Braverman, op.cit., p.67.

32. Ibid., p.68.

33. Dubois uses the term sabotage to cover a series of activities undertaken by workers as a response to their particular work circumstances. This resistance is better described as forms of negative control. They range from the extreme and illegal forms like arson, vandalism and theft to more subtle and passive elements like go-slows, absenteeism, working without interest, enthusiasm or initiative. Dubois provides a wide range of examples from western sources, op.cit., pp.21-59. See also Friedman, op.cit., pp.51-52.

34. Dubois, op.cit., pp.51-79. Also see S.Marglin, "What Do Bosses Do?", in "The Division of Labour", A.Gorz (Ed), London, 1976, p.34.

35. The surplus is reduced either because some portion of final output is destroyed or rendered useless or because the potential for surplus extraction has not been achieved.

This can be explained either by the workforce reducing the intensity of its labour or alternatively by a reduction in the time spent actually working.

36. See T.Nichols and H.Beynon, op.cit., pp.133-146. An American account of the ability of the workforce to act upon the labour process is provided by B.Watson, "Counterplanning on the Factory Floor", Radical America Pamphlet, Boston, 1971.

37. Friedman's criticism of Braverman revolves around this point. Friedman argues that management under capitalism have more choice than simply direct control and can adopt a strategy of responsible autonomy. See Friedman, op.cit., pp.80-85. Thompson in his survey of these debates over control and resistance, concludes that within the overall control of the labour process there are a variety of techniques and structures available. Thompson, op.cit., p.151.

38. See T.Nichols, op.cit., p.25.

39. Marx, Vol.1, op.cit., p.477.

40. Ibid., pp.478-479.

41. K.Marx, "Wage, Labour and Capital", in Marx/Engels Selected Works, Vol.1, London, 1953, pp.92-93.

42. Marx, Vol.1, op.cit., pp.190-191.

43. See M.Cooley, "Contradictions of Science and Technology in the Productive Process", in Rose and Rose (eds), op.cit., pp.83-85.

44. Marx, Vol.1, op.cit., pp.595-596. See also D.Yaffe and P.Bullocke, "Inflation, Crisis and the Post-War Boom", Revolutionary Communist No.3/4, 1975, p.17.

45. Braverman, op.cit., pp.120-121.

46. See the survey in Thompson, op.cit., pp.118-121.

47. Marx, Vol.3, op.cit., p.250.

48. See T.Nichols and P.Armstrong, op.cit., pp.112-114.

49. The most significant element of this fragmentation at the present time is the separation between the employed and unemployed sectors of the working class. This is coupled with the role of redundancy payments which reduces worker's resistance to restructuring. From the viewpoint of the capitalist class the strategy has worked relatively easily in the instance of British Steel, although seems less successful in the case of the NCB. This is a good example of the way in which similar strategies in almost the same time

period, but in differing industries can have widely differing effects dependent upon the level of collective resistance.

50. The whole thrust of capitalist development has been to reduce the differences between the working class in different industries, regions and occupations. This has partially stemmed from the use of similar technologies and organisation of production in different industries. (To accept this is not necessarily to concur with Braverman's deskilling and degradation thesis). The interchangeability of workers between branches of production is by no means complete but is increasing. Fragmentation, along lines of gender, race, generation, skill and education, employment or unemployment, occurs precisely for control purposes.

51. "The real barrier of capitalist production is capital itself", Marx, Vol.3, op.cit., p.250. Also see V.I.Lenin, "The State and Revolution", in Lenin's Selected Works, Moscow, 1977, pp.320-335.

52. V.I.Lenin, "Collected Works", Vol.29, p.420.

53. V.I.Lenin, "Collected Works", Vol.19, p.62.

54. V.I.Lenin, "Collected Works", Vol.29, p.427.

55. This would correspond to a period of material abundance or "full communism".

CHAPTER 2: THE POLITICAL ECONOMY OF THE USSR

In order to begin to answer the questions posed at the end of the last chapter it is necessary to consider the way in which Soviet political economists and their western counterparts, regard the question of work and class structure. This is not an exhaustive treatment of this topic but is intended to point out common limitations in their work before developing an alternative analysis of work and labour in the USSR linked to the present performance of the Soviet economy. In this way a more adequate political economy can be constructed which will provide the basis for explaining the motivation for the Shchekino experiment and the other experimental initiatives considered in Chapter 5.

SECTION 1: SOVIET PERCEPTIONS OF CLASS STRUCTURE.

The first general point to be made is that the analysis is couched in the terminology and categories of Marxist political economy. However, the same categories that can be used to such an effect in the analysis of capitalism, seem hollow in the hands of Soviet theoreticians. The reason for this is that the present ruling group have inherited Marxism as their ideological foundation and it cannot be simply cast aside. The legitimating link between past and

present make it necessary to maintain the facade of Marxist categories even if the content is neutered (1).

The class analysis adopted is a formalistic interpretation of Marxism which identifies classes in terms of legal forms of ownership. The analysis is rooted in the traditional Stalinist view of political economy. For Stalin,

"the province of political economy is production, the economic relations of men. It includes: (a). the forms of ownership of the means of production; (b). the status of the various social groups in production and their interrelations that follow from these forms (c). the forms of distribution of products, which are determined by them" (2).

As Ticktin has pointed out, in another context, this is an inversion of the usual Marxist methodology which usually proceeds from the socio-economic to the political and legal forms and not the reverse (3).

The working class and the peasantry are differentiated from one another as the two major classes, in respect to property relations. The working class are involved in production in the state sector, with state owned means of production whilst the peasantry operate within the collective farm sector, where the means of production are owned by the collective (4). The utter formalism of this

distinction is well illustrated by Stalin himself, as he points out,

"the land, which has been turned over to the collective farms in perpetual tenure, is used by them virtually as their own property, in spite of the fact that they cannot sell, buy, lease or mortgage it" (5).

(He might also have added nor change its use).

These classes are overlaid by a stratum, the intelligentsia, who are not defined in terms of property but with respect to work function and education (6). Both the classes and the stratum are defined as 'non-antagonistic' or 'friendly' (7). Or as Manevich states,

"It is characteristic of socialist production relations that the contradictions they are subject to, (with respect to the social organisation of production as well) are non-antagonistic" (8).

In relationship to Marxist political economy this characterisation is absurd. Firstly, as indicated, no class can be defined in isolation from its antagonistic opposite pole. The whole basis of class analysis around the question of the surplus extraction process, necessitates such a definition, unless what is being described is a classless

society then the concept of class disappears. Secondly, the adjective 'friendly' has no analytical content whatsoever, as the class relation, defined in a Marxist sense, is a relationship based upon contradiction which implies antagonism. This formulation is undoubtedly desirable on political and ideological grounds for the ruling group, (who interestingly disappear by coalescence in this analysis). Stalin's vehement attack on central concepts of Marxist political economy, confirms this desire to maintain the form of Marxist analysis whilst removing the content.

".... we must also discard certain other concepts taken from Marx's capital I am referring to such concepts, among others, as 'necessary' and 'surplus' labour, 'necessary' and 'surplus' product and 'necessary' and 'surplus' time" (9).

Therefore, by starting from a legalistic definition of class and by declaring them 'non-antagonistic', Stalin and later writers in this tradition are able to conclude that all Soviet labour is 'necessary labour' (10). The point of departure for Marx, the process of surplus extraction, disappears in Stalin's analysis and in the analysis of contemporary Soviet writers. However, if these formulations are inadequate to explain the political economy of the USSR they are of equally little use with regard to the practical problems facing the present ruling group, particularly in relation to the management of the Soviet economy in a time

of crisis. It was recognised by the ruling group that sociological research could play a part in identifying, understanding and eventually managing complex social processes, much like the role it plays in the west (11). This in turn led to an easing of official proscriptions on sociological work and fueled an internal debate, within Soviet academic circles, concerning the question of class structure (12).

The consequence has been that over the last decade or so, traditional attitudes to class structure have been questioned and amended in concrete sociological studies (13). The revision however, has not been in the direction suggested by Marxist political economy but has involved the superimposition of a predominantly functionalist methodology over the traditional formulation and the two co-exist. The revised approach is based upon the intra-class occupational structure. For example, Shkaratan utilises an eightfold division into occupational groupings from 'management' to 'unskilled worker' in his work (14). This type of framework is then used to correlate questions like labour turnover, migration patterns and labour discipline and participation, to structural features like place in the hierarchy of skills, training level, education etc. The end result seeks policy responses to management questions (15). The practical need for such work in an increasingly complex and technologically based society forced the political and ideological compromise embodied

within this analysis but this also has been further justified.

This type of analysis, it is claimed, is in full accord with the present stage of Soviet development (16). Socialist society, in the period when it is constructing the material preconditions for 'full communism', cannot overcome a necessary 'social division of labour'. This is seen as a function of both technology and the present stage of development.

"Thus though there are no antagonistic classes under socialism, socio-economic distinctions and non-antagonistic contradictions between different kinds of labour nevertheless continue" (17).

The remaining inequalities are seen as necessary, as distribution is based upon the quality and quantity of work performed.

"The economic law of distribution according to the amount and quality of work performed determines the entire system of wages and salaries" (18).

Work itself, is described as being "no longer an onerous duty" but "a right and an objective necessity", whilst labour is no longer a commodity but is "hired along planned

lines" (19). It is worth pointing out that work is not a duty under capitalism but an objective necessity and that the final statement conceals as much as it reveals.

The end result of this analysis is that the Soviet economy is described as being consciously regulated and not subordinate to the law of value. It is suggested that the absence of private ownership of the means of production and their control by the state excludes the possibility of exploitation (20). Kozlov also argues that exploitation has been abolished, as the state is the political expression of the working class. Consequently any socially produced surplus at the disposition of the state, is firstly, consciously pre-determined by the planning process, and secondly, at the disposal of the direct producers via their control of the state (21). The USSR is viewed as a society moving towards 'social homogeneity' (22). As Table 1 illustrates, by defining the class structure in terms of only two classes the appearance of homogeneity can be created and once again the ruling group disappears by amalgamation. Part of this homogenisation process is the supposed destruction of the distinctions between mental and manual labour and the overcoming of disparities between urban and rural life (23). Table 2 illustrates the shift in the USSR away from a predominantly rural to a predominantly urban population. However, it also shows that the proportion of the rural population is still large in comparison with other developed countries (24).

TABLE 1

THE SOCIAL STRUCTURE OF THE SOVIET POPULATION (%)

	1913	1924	1928	1939	1959	1970	1979	1982	1983	1984
Whole Population	100	100	100	100	100	100	100	100	100	100
Workers & Employees	17	14.8	17.6	50.2	68	79.5	85.1	86.7	87.8	87.5
Workers Only	—	10.4	12.4	33.7	50.2	57.4	60	60.9	61.2	61.5
Collective Farm Workers & Handicraft Workers in Co-operatives	—	1.3	2.9	47.2	31.4	20.5	14.9	13.3	12.9	12.5
Independent Peasantry & Handicraft Workers not Organised in Co-operatives	66.7	75.4	74.9	2.6	0.3	—	—	—	—	—
Bourgeoisie, Landowners, Merchants & Kulaks	16.3	8.5	4.6	—	—	—	—	—	—	—

SOURCES: — "Narodnoe Khozyaistvo SSSR v 1982g", Moscow, 1983 p.7; E. Manevich (Ed), "Osnovnye problemy ratsional'nogo ispol'zovaniya trudovykh resursov v SSSR", Moscow 1971, p.50 Vestnik Statistiki, 1983 No. 4 p.60.

""Narodnoe Khozyaistvo SSSR v 1983g", Moscow, 1984, p.7.

TABLE 2

POPULATION STRUCTURE IN THE U.S.S.R.

	<u>TOTAL</u>	<u>URBAN (m)</u>	<u>RURAL (m)</u>	<u>URBAN (%)</u>	<u>RURAL (%)</u>
1940	194.1	63.1	131.0	32.5	67.5
1961	216.3	107.9	108.4	49.9	50.1
1970	241.7	136.0	105.7	56.3	43.7
1979	262.4	163.6	98.8	62.3	37.7
1982	268.8	171.7	97.1	63.9	36.1
1983	271.2	174.6	96.6	64.4	35.6
1984	273.8	177.5	96.3	64.8	35.2
					1st January.
	275	178.5	96.5	64.9	35.1
					1st July.

SOURCES:- " Narodnoe Khozyaistvo 1982", op. cit., P.5; Vestnik Statistiki, 1984, No. 4, p.66; "Chislennost' i sostav naseleniya SSSR,"Moscow, 1984
p. 6; "Narodnoe Khozyaistvo, 1983 ",op. cit., p.5.

Tables 3 and 4 show the increasing educational level of both agricultural and manual workers but they are both still more likely to be less educated than their urban or mental worker counterparts. The low prestige afforded to manual work and the ever increasing pressure on working class children to obtain higher education so that they need not become workers themselves, testifies to the gulf between ideological claims and Soviet reality. Furthermore, the gap between urban and rural workers is still large, even though the average wage of collective farm workers has risen by 18.5% in the last 3 years it is still 22.5% less than the average wage of their urban counterpart as Table 5 indicates. The disparity appears even larger when it is realised that industrial workers work an average of 231 days a year but this rises to 257 days for collective farm workers; 264 days for collective farm machine operators and tractor drivers; and between 309 and 315 days for collective farm workers involved in animal husbandry (25). Therefore, the rural worker works longer hours for less. On top of this disadvantage, the allocation of consumer goods and social provision is worse in rural areas and this ensures that living and cultural standards in the rural areas are well below the urban centres.

In the process of constructing the homogenous Soviet society, the leading role of the party and working class is continually emphasised and the otherwise harmonious picture is only clouded by peripheral problems which, it is argued, will be overcome by better management of social processes (26).

TABLE 3: EDUCATIONAL LEVEL OF THE EMPLOYED BY SOCIAL GROUP. (No. with Higher and Secondary Education per 1000).

	<u>1939</u>	<u>1959</u>	<u>1970</u>	<u>1979</u>	<u>1983</u>	<u>1984</u>
WORKERS	87	401	590	760	813	825
EMPLOYEES	546	911	956	982	986	987
COLLECTIVE FARM WORKERS	18	226	393	593	677	695

Source: "Narodnoe Khozyaistvo 1982", op.cit., p.29 and "Narodnoe khozyaistvo 1983", op.cit., p.30.

TABLE 4: EDUCATIONAL LEVEL OF WORKERS IN MENTAL AND MANUAL WORK (No. with Higher and Secondary Education per 1000).

	<u>1939</u>	<u>1959</u>	<u>1970</u>	<u>1979</u>	<u>1983</u>	<u>1984</u>
MANUAL WORKERS	45	325	543	732	801	815
MENTAL WORKERS	515	896	953	981	985	986

Source: "Narodnoe khozyaistvo 1982", op.cit., p.29 and "Narodnoe khozyaistvo 1983", op.cit., p.30

TABLE 5: AVERAGE WAGES OF WORKERS, EMPLOYEES AND COLLECTIVE FARM WORKERS

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Average Wage of Workers and Employees	168.9	172.5	177.5	182
Average Wage of Collective Farm Workers	118.5	122.1	128.9	141

Source: Vestnik Statistiki, 1984, No.11, p.37.

The existence of a whole range of labour problems, which will be considered in more detail in section six of this chapter, are explained as survivals from the previous capitalist mode of production (27).

Western sociologists appear to be just as confused as their Soviet counterparts when it comes to the question of class structure and work in the USSR. This confusion is evident throughout the work of David Lane (28). It is perhaps most explicitly expressed in his joint work with O'Dell, where they define the Soviet working class as,

"all manual and non-manual labour occupied in publicly owned institutions concerned with production, distribution and exchange" (29).

By pressing the formalism of Stalin's definition of classes to its logical conclusion they argue that non-manual workers do not constitute a separate stratum but are integral to the working class because,

"in a Marxist sense their relationship to the means of production is the same as that of the manual workers: all are wage earners employed in state-owned enterprises" (30).

They do not however, define the class that stands in opposition to this working class. Furthermore, in applying this definition to the USSR it is impossible to leave

anyone out of the working class. It would seem that Lane and O'Dell also reach this conclusion by their use of terms like "a politically unitary class society" we may conclude that they view the Soviet Union as a classless society. In the concluding chapter of their work this is confirmed when they refer to the economic class structure as being "unitary" (31). In fact what they do is simply reproduce the functionalism of their Soviet counterparts and state,

"It is certainly not the case that with the development of socialism the working class becomes a unitary and undifferentiated group. Social stratification arises from the social division of labour, which gives rise to an occupational structure. The division of work activity involves specialised and different social functions and qualitative differences between groups playing specified roles" (32).

By the end of this paragraph the concept of class has disappeared. What is of importance is the occupational structure where 'groups' are differentiated by 'work activity'. The social division of labour they refer to is more correctly defined as a technical division of labour that stems from a particular stage of technological development. It is precisely the social division of labour that their analysis excludes by definition. For Lane and O'Dell, it is the level of technology and its rate of advance which influences and determines the occupational

structure and they conclude,

"in our view the occupational structure has evolved in a way not unlike that of capitalist societies" (33).

In other words we have confirmation of the "logic of industrialism thesis" which is a form of technological determinism which suggests that convergence is taking place, between East and West, driven by the imperatives of a neutral technology. Lane and O'Dell then go on to conclude, like their Soviet counterparts, that problems like absenteeism (34), drunkenness (35), low productivity and poor quality production (36), or the high proportion of unmechanised manual work (37), are all either artefacts of the recent peasant past of large sections of the workforce or simply attributable to the Soviet Union's late start on the road to industrial maturity. The argument would be more convincing if it could be shown that more industrially mature societies did not suffer the self-same problems. It also raises the question of how long a peasant remains a peasant once removed from the countryside and employed in an industrial environment and living in an urban location. As the Soviet workforce becomes more of a hereditary class this peasant background becomes more tenuous and the reasons for the behaviour cited have to be located in the present work situation of the Soviet worker.

The general point to be made is that this type of analysis

assumes away the central question. By assuming that the class structure is "non-antagonistic" or "unitary" and that exploitation has disappeared, then by definition so too has the surplus. The question of control over the surplus (either direct by the ruling group or negative by the workforce) is also rendered irrelevant. The abandonment of Marxist political economy reduces the analysis of class to little more than a ritual in the Soviet case. For Lane and O'Dell it is a term that leads to confusion until it is substituted in their analysis by the functionalism of occupational structures.

I would further argue that western writers in the Marxist tradition have fared little better in this debate, with the analysis of class structure and the mode of production continually being hampered by the lack of empirical knowledge of the USSR, or the desire to force the reality of the USSR into a particular pre-conceived theoretical viewpoint (38). The problem is that some features of the contemporary USSR are superficially similar to either forms existing under capitalism or under previous modes of production. Therefore, by picking up on these similarities and working them up into an all embracing theoretical perspective, the specificity of the USSR is either lost or reinterpreted to fit the theory. I would argue that the central question of surplus extraction and control has not been the starting point for any of these perspectives and if it is mentioned at all it is deduced as a result of the

analysis rather than forming its starting point.

All these analyses are indicative of a broader problem. They all divorce the concept of class from the operation and performance of the economy as a whole and from relationships both within and between enterprises, that condition that operation and performance. For example, the Soviet sociologists cited, describe the society as socially harmonious, the theoretical political economy texts describe the development of the Soviet economy as planned and proportional, whilst they both ignore the empirical realities of the Soviet economy. For example Berri argues that,

"Planned management of the economy ensures its smooth, crisis free development at high stable growth rates, with full employment and increasingly efficient use of resources" (39).

Likewise Lane and O'Dell, who make much of describing the Soviet working class in relationship to production, only mention the performance of the economy on the last page of their work (40). Class is treated as a sociological category, the main aim of which is the unambiguous classification of individuals into an occupational hierarchy, rather than a category of political economy. As previously suggested, class structure both reflects and effects the surplus extraction process and does not

necessarily lead to such unambiguous classification schema. Even under capitalism it may be the case, that some individuals do not appear to fit neatly into the class structure but this does not undermine the analysis and is irrelevant as a basis for rejecting Marxist political economy because it is not the intention of the theory to provide such a schema. Class analysis is not a labelling process but is an attempt to grasp the central dynamic of any socio-economic formation (41).

The degree of social harmony suggested by Soviet authors and their western acolytes, would tend to suggest that Soviet society should have little difficulty in motivating Soviet workers to produce more, more efficiently and with a higher regard for quality. If the Soviet Union is a 'non-antagonistic' social formation it raises the question of why it is plagued by a series of labour problems, leading to declining labour productivity growth and an overall 'slowdown in economic growth. It is only when these problems are placed in the context of the struggle around the generation and control over the surplus that they become explicable. The following section seeks to identify the antagonistic relationships that underlay the performance of the Soviet economy, both currently and in the mid-sixties, before relating this to the pressure for reform and the importance of the Shchekino experiment.

2. THE PRINCIPAL SOCIAL RELATIONS OF PRODUCTION IN THE USSR.

The basic argument to be developed is that the ruling group in the USSR attempts, however imperfectly, to extract and control the distribution of a reliable, usable and growing surplus from the direct producers. From the viewpoint of the ruling group this surplus is essential, not simply to maintain their own consumption privileges, but more importantly to legitimise their role and enable them to reproduce their socio-economic position. This has two related aspects.

Internally, a growing surplus is necessary to provide the ruling group with the ability to incorporate and control sections of the populace via gradations of consumption privileges, in the same way as the incorporation of the middle classes and the upper layers of the working class is achieved in the west, and thereby deal with rising domestic expectations and the consequent discontent, from whatever source (42). Their ability to do this is constrained, by amongst other things, the need to maintain artificially low prices for agricultural products (43). This is the necessary price to be paid for dampening potential internal discontent and maintaining a minimal level of support. The examples of Poland in 1971, 1976, and more recently (44), the outbreaks of worker discontent in the USSR in the early sixties and more recently serves as

a reminder of the potential costs (45). Official concern over the availability and quality of consumer goods and agricultural products, over a number of years, reflects this desire (46). If this could be achieved the incentive effects would strengthen the ruling group's control over the process of surplus extraction, guarantee their reproduction and coalescence as a ruling class but the pre-condition for this is a rising socially produced surplus.

Externally, it is necessary for the ruling group, to maintain a sphere of influence on the world stage. This is achieved in a number of ways. Firstly, directly through arms and military expenditure, which guarantees the integrity of Soviet borders in regions like China or provides a buffer zone like the Eastern bloc countries. Secondly, indirectly through economic aid and trade with socialist bloc countries, friendly states or potentially friendly states (47). The ultimate aim being, to maintain the USSR outside the capitalist world economic orbit. The argument is that the USSR is not driven externally as a result of its own internal economic laws of motion, as with the imperialistic dynamic that operates within capitalism. The USSR does not suffer from the overproduction of capital goods that need to find markets overseas but it is its economic backwardness that generates a need for a buffer zone between itself and capitalism. This is primarily a political and strategic question although it does have

potential economic advantages from an increasing division of labour, leading to specialisation and integration within COMECON and scale economies (48). The USSR cannot and could not compete wholly on the world market with the western capitalist countries due to the nature of Soviet products. For example, only a little over 4% of Soviet exports of machine tools go to developed capitalist countries, the main reason being poor quality and design (49). Hence contact with the west can only be carried out in a much mediated form. The ultimate aim is to maintain the USSR outside the capitalist orbit but again the pre-condition for this is a growing domestically produced surplus.

It should be pointed out that the surplus is not, as some writers maintain, simply the additional consumption privileges of the ruling group (50). It comprises the whole socially produced surplus product, over and above that necessary to reproduce the direct producers and control over the surplus implies control over decisions about present consumption, accumulation and distribution. As a consequence, it implies control over the future direction and proportions of the economy and the development of the labour process.

As a consequence the fundamental plane of antagonistic social relations lies between the direct producers and the economic administrators of the state, at both the central and local level and their management representatives within

the enterprise. The role of management is particularly contradictory and will be elaborated upon further. However, it should also be remembered that the antagonisms generated around the surplus extraction process also affect that process itself. The direct producers are able to exert negative control over both the quality and quantity of the surplus extracted via their indirect control of the labour process. This interaction gives rise to the particular economic performance of the system under examination. In order to explain this it is necessary to outline the nature of the surplus extraction process in the USSR and the economic results that its specific form produces.

SECTION 3: THE NATURE OF WORK AND REWARDS IN THE USSR.

The starting point of this analysis is work and labour time, given that this is the precondition for the production of use-values necessary to satisfy human wants. The individual Soviet worker commits his labour-time to a pre-specified labour activity, at a particular enterprise or association, for a specified period of time by signing a labour contract (51). The worker is compelled by economic necessity to enter this relationship because he is effectively divorced from the means of production which are necessary to turn his labour into the use-values necessary for his existence, at a given social and technological level. The means of production stand outside the direct control of the worker, much like the situation under capitalism described by Marx as a situation where, "dead labour dominates and pumps dry, living labour power". The access to use-values is conditioned by work, non-work is not an option (52). The worker has discretion over both the labour activity he undertakes and over the location where he works but this is constrained by three things.

Firstly, the labour activity is determined by previous education, training, skill level and experience coupled with the available work opportunities and the demands for the skills of the individual worker (53).

Secondly, the location, either geographically or between

enterprises, is subject to control. For example, some cities have restricted access and the internal passport system can be used to control the workers freedom of movement. Movement between enterprises and branches has and can be controlled. For example, movement out of the military production sector can be difficult. The record of the worker's performance in his work book can also be used for control purposes.

Thirdly, the labour laws in operation at any particular time will constrain freedom, along with the obvious constraint that the choice of external emigration is absent.

In a sense therefore, the Soviet worker is as free as his western counterpart and out of this freedom is born the economic necessity to expend labour time, in order to receive the means to attain the necessities of life. However, this freedom needs to be qualified. Unlike his western counterpart, the Soviet worker is not only subject to the necessity to work but also has the right to work (54). This principle, enshrined in the Soviet constitution, is perhaps the major remaining gain from the October Revolution and creates a particular relationship of dependency, in that the individual enterprise cannot make superfluous workers redundant. If the enterprise wishes to remove workers it can only do so in carefully defined circumstances and it must find them a similar job, with similar conditions, content and rewards (55). This is not

to suggest that all enterprises stick to the letter of the labour law (56). In specific circumstances individual workers can be forced to leave their work but even then the worker has recourse to the Trade Unions and the legal system for redress and reinstatement (57). The point is that even if individuals can be victimised by enterprise management, the workforce as a whole, or even sectors of it, either by trade grouping or region, are relatively secure and the Soviet worker is protected in a manner incompatible with and unseen under capitalism (58).

This relationship, between the worker and the ruling group, is both a product of, and a cause of, the ruling group's insecure position in Soviet society. As the ruling group rest upon state property and the historical legacy of Bolshevism they cannot break this linkage without cutting the legitimating links with the October Revolution. Furthermore, it would remove the apparent validity of the claim that the Socialist bloc's superiority over capitalism is shown in the maintenance of full employment whilst the capitalist world experiences ever-increasing unemployment (59). The power of this ideological dimension should not be overlooked. However, the fact that this relationship cannot be severed is a partial cause of the insecure grip the ruling group has over the socially produced surplus and consequently threatens their reproduction.

The consequence is that the dual freedom Marx referred to, with regard to the worker under capitalism, is

inappropriate in the Soviet context. Workers under capitalism are insecure individually and as a class and this insecurity is an important element of control at the level of both the individual capitalist firm and at the level of the whole society. However, while the Soviet worker may be individually insecure, collectively he is secure and cannot be controlled in the same manner. This is the first element of the particular nature of the Soviet labour process, the second element refers to rewards.

In return for the labour time expended the worker receives an individual return in the form of a money wage. This is predominantly determined administratively by the centre but can be manipulated at the level of the enterprise by the use of premiums, bonuses and piece-rates. For example, currently 80% is accounted for by basic wages and the remaining 20% by bonuses but there are two problems. Firstly, there has been an overall tendency towards wage levelling and a reduction in the level of wage differentials. In 1955 the relationship between the wages of ITR and workers was 1.68 but by 1977 it had fallen to 1.21 (60). Secondly, as Ticktin has pointed out, the wage in the USSR may be paid in a money form but money in the USSR does not function as the universal equivalent hence the wage form is quite different from capitalism (61). Access to use-values is not determined on the basis of money alone. Access depends upon position in the hierarchy, access to privileged, closed supply channels, access to foreign currency, place of residence, influence and 'blat',

chance or foreknowledge, corruption and the bartering of skills on the black market (62). For the ordinary worker the holding of money may well be a necessary condition to gain access to use-values but it need not be a sufficient condition. Evidence for this is the all pervasive nature of the queue as an allocative mechanism and the continual rise in the personal savings index. Therefore, the money wage is not the same as that under capitalism as money does not provide unambiguous access to use-values. Furthermore, the worker receives a return for his expended labour in the form of part of the social wage which it is estimated accounts for 23.4% of the family income of workers and employees and 19.1% of collective farm workers income. In fact these payments are rising faster than individual wages; in 1971-1981 average wages grew by 45% for workers and employees and 72% for collective farm workers but per capita payments from the social wage rose 81% in the same period (63). This may take a number of forms.

Firstly, it can be state determined, like health, education, transport or subsidised food (again actual access will be a function of elements like place of residence, place in the hierarchy etc.). Secondly, it can be determined by the enterprise, for example housing, cultural and sporting amenities, holiday facilities, access to sanatoria etc. Access to the first elements of the social wage are non-discriminatory, in as much as they are unaffected by the individual worker's work performance. The second category can be manipulated at the level of the

enterprise and some correspondence between work performance and access can be administratively arranged. Soviet sources however, have expressed concern over the lack of correspondence between the social wage and work performed. Particularly as throughout the period 1976-1982 the per capita payments and benefits from public consumption funds have been growing faster than the growth in labour productivity (64).

There are a number of ramifications that follow from this analysis. Firstly, the particular nature of the wage form means that the relationship between work performed and use-values eventually received is tenuous as the wage is mediated by a variety of other elements. This has two complementary aspects. By reducing work effort to a minimum the worker's consumption of use-values will be hardly affected and in the opposite respect, by increasing effort, even if wages rise marginally, there is no necessary impact on the volume of use-values at the workers disposal. The implication to be drawn from this is that in the USSR wages can neither be used as an incentive nor as a disciplining mechanism, except in the most limited form. Therefore, the Soviet workforce is controlled by neither the stick of unemployment nor the carrot of increased wages. Labour power cannot be considered a commodity because for this to be the case labour would have to be free in the dual sense referred to earlier. Economic regulation in the USSR can be seen in

terms of open state intervention because the social relations of production are necessarily transparent (65). The veil of commodity fetishism does not hide the political nature of economic decisions from the direct producers. This raises therefore, the question of economic regulation and the nature of production itself.

During the labour time expended the worker, operating with the means of production located in the enterprise and in co-operation with others, produces an output. The technological level, volume, rate of renewal and rate of innovation of the means of production are determined by the centre. So too is the flow of necessary inputs to produce the specified output. The general direction of output and its composition are determined by the political decisions of the ruling group and are turned into plan instructions in the iterative planning process between the enterprise and the centre and here again the antagonistic nature of the social relations of production assert themselves.

The argument, associated with Ticktin (66) and Smith (67), is that effective planning is impossible in the USSR because socialist planning implies the conscious direction of the economy by the freely associated direct producers. In the absence of such participation, in conditions of scarcity and social antagonism the supposed planning degenerates into over-centralised bureaucratic administration of the economy.

In the Soviet context the plan is only amenable to control by the worker in the most formal sense. Participation, even to the maximum extent in the party, trade unions, production conferences at enterprise level etc. gives the worker little direct control over the general direction of the economy, or over the assortment or quality of goods, or over the particular output of his enterprise. The hierarchical nature of the society and of economic control, coupled with the principle of one-man management effectively excludes direct participation (68). On top of this the very methodology of planning, on the "ratchet principle" or "planning from the achieved level", means effective change is impossible and the plan appears to take on a life of its own, outside the influence of the worker, or even the manager (69).

The workforce is only able, in a negative and indirect sense to maintain a degree of control over its own labour process and thereby affect the volume and nature of the surplus (70). As suggested in the first chapter, this type of control is implicit in any hierarchically ordered society where the direct producers are divorced from the means of production. It is management's function to minimise this negative control and at an operational level extract the surplus which, under capitalism takes a value form. In the USSR this relationship is both qualitatively and quantitatively different.

Under capitalism the role of rewards and discipline, via the media of money and unemployment respectively, reinforces management's task. However much the balance of class forces shift, ultimately these sanctions are at the disposal of management to discipline the workforce. The precise balance between reward and sanction will be determined by the broader features of the period. For example, with a significantly large reserve army of labour management's concerns in recession will be different from their position during periods of boom when near to full employment exists and labour shortages develop. Coupled with this a particular feature of capital's control has developed during the current recession. That is the ability to shift productive capacity between locations and thereby discipline the workforce with the threat of such action. In the USSR the disciplining role of unemployment is absent, the role of money is ambiguous and the physical removal of productive capacity has no similar function in the USSR.

The role of management in the USSR is more ambiguous and problematic than under capitalism. Under capitalism the performance of a manager or a management team relates directly to their economic results which are mediated through the impersonal market and their rewards, either salary or more nebulous elements like prestige, are a function of this performance. Managerial remuneration packages under capitalism are increasingly composed of salary plus bonuses etc., but more importantly, commonly include shares in the company by whom they are employed.

Consequently, any objective grounds for presuming that a divorce of ownership from control will lead to different patterns of behaviour is being eroded. There is a unity of purpose between the eventual owners of the extracted surplus and those whose function it is to supervise the process of surplus extraction. Many radical writers have pointed out anyway, that the concept of a divorce of ownership from control need not lead to any fundamental change in the operation of capitalism because ultimately managerial performance is subject to market disciplines (71). Even a more orthodox writer like Marris has pointed out that the divorce between ownership and control need not lead to a divergence of objectives. He argues that owners and managers may well have a single unified aim of maximising the "balanced rate of growth", a concept not dissimilar to the Marxist notion of accumulation as the prime motivation of capital (72). Furthermore, the capitalist manager has, to varying degrees, some control over the eventual disposition of the extracted surplus, determining the proportions of dividend paid, retained profits etc. and can determine the direction and level of reinvestment in new capacity. This is a powerful motivating influence on the capitalist manager's behaviour because not only are current rewards dependent upon current performance but so too are security and rewards into the future. There is therefore, a correspondence between the interests of the owners of the surplus and the agents whose role it is to supervise the extraction of that surplus. Furthermore,

there is an unambiguous, medium through which managerial performance can be assessed.

In the USSR managers are also judged by their performance and money rewards, prestige and advancement follow success. Money rewards may well be secondary, for the reasons already suggested above, in comparison to advancement up the nomenklatura or movement to a more prestigious enterprise or location where access to consumer goods and cultural amenities may be easier or more certain. However, Soviet managers have little or no control over the surplus they are responsible for extracting and cannot guarantee that their success will lead to an enhancement of their enterprise's capacity via reinvestment. Furthermore, the mechanism through which their performance is assessed, the plan, is amenable to manipulation by them. Therefore, plan fulfilment, does not necessarily reflect their ability to supervise the surplus extraction process, so much as it measures their ability in the bureaucratic process of plan compilation.

The fundamental antagonism between the ruling group and the direct producers is therefore, supplemented by a further plane of antagonism between the economic administration at the centre, who control the disposition of the surplus once produced and the immediate controllers of the means of production whose task it is to put the plan into operation, enterprise management staff. The suggestion is that those who set the plan targets at the centre are continually

thwarted by the self-interest of those whose task it is to supervise the process of production. The reason for this is that no Soviet plan, or indeed any plan, can be all-embracing and completely unambiguous and this leaves a degree of discretion to enterprise management who act in a manner most suitable to themselves (74). This disrupts the internal logic of the plan and instead of being a set of unified directives for the enterprise it degenerates into an ever-changing series of disjointed and often mutually contradictory administrative measures as the centre attempts to keep up with the reality they are supposed to be directing. This is not to suggest that Soviet enterprise heads are deliberately corrupt or disruptive but is a recognition of a well-documented element of Soviet industrial life (75). In fact some actions, even if they are illegal or semi-legal are essential for the functioning of the system.

The ambiguous position of management has an impact upon the negative control exercised by the workforce. Managerial rewards are in the last analysis determined by plan fulfilment and their aim is to fulfill or marginally overfulfill the plan. This leads the enterprise director to courses of action directly in conflict with the aims of the centre.

Firstly, within the planning process, it is rational for enterprise management to underestimate the productive capacity of their plant, in this way the targets received

will be achievable within present plant capacity, even if the enterprise is faced by supply problems. This implies an underestimation of the potential surplus that could be extracted from the plant's workforce.

Secondly, directly related to the above, if the enterprise anticipates supply difficulties, then again it will be rational to overestimate the material supplies necessary for production. This is particularly true of labour supplies when the USSR is faced by an apparent labour shortage. It is irrelevant for the individual manager that his action actually creates the difficulty he is trying to avoid. If he did not act in this manner it could not be guaranteed that other enterprises would follow his example. As Berliner pointed out in the late fifties, labour will be hoarded to meet unexpected contingencies (76). This situation has not changed and the continual changes in plan targets, changes in priorities, breakdowns due to poor quality machine tools coupled with inadequate maintainance and repair, staff being withdrawn for agricultural work at harvest time, late supply of essential inputs all leads to arhythmic work patterns and confirms the rationality of labour hoarding for enterprise management seeking to fulfill plan targets (77). It is worth pointing out that this dynamic is the complete opposite of that which operates under capitalism where the key to managerial success is the expulsion of living labour from the

production process. The safety factor of hoarded labour leads to overmanning and underemployment which further reinforces the security of the workforce and further reduces any correspondence between work and rewards. What effectively exists is a situation where enterprise management recognise that they require at least the acquiescence of the workforce in order to be able to fulfill the plan. Hence a trade-off exists through which the enterprise management quantify potential workforce resistance and underestimate capacity as a consequence, leading to a much lower intensity of labour than exists in the west. This in turn recreates the problem that the enterprise management is seeking to avoid.

It could be argued that the features of the labour process in the USSR, so far identified, are only different by degree to the capitalist labour process. However, whilst negative control exerted by workers exists under capitalism it is nevertheless inimicable to that mode of production. At an abstract level it would be eradicated by the operation of the law of value. This can be explained by a simple example. Consider a firm operating within a competitive market (78), at a similar scale and technological level to its competitors but where its workforce have been able to secure a degree of negative control. This may operate upon line speeds or manning levels or any other aspect of the labour process. The firm would find that the labour time necessary to produce the particular commodity would exceed the average socially

necessary labour time. This labour expended would not be reflected in the value of the commodity and the firm would find surplus labour-time, surplus value and profit all reduced. This decline of profitability, with respect to its more managerially aggressive competitors, would eventually lead to the firm being driven from the market, either by failure or take-over. The centralisation and concentration of capital that occurs as a consequence would mean that the control enjoyed by the workforce would be lost. This occurs either because the former employees will join the ranks of the reserve army of the unemployed, with the negative effects that follow from that or will be forced to work in the more aggressive environment without the negative control they once enjoyed.

The suggestion is that the operation of the law of value under the capitalist mode of production will undermine the objective basis of negative control and the form of control will tend towards the most efficient. This is not to deny that in reality this process may well be mediated by, for example the operation of the social-democratic state, which may well deflect the operation of the law of value under certain circumstances for some period of time (79). Nor does it imply a unilinear movement towards the most efficient forms of control. The reality will be determined by the relationship between the antagonistic classes both globally and locally but the inherent tendency will be as described above.

In the USSR however, the forms of negative control are continually being reproduced and there is no inherent tendency for their elimination. They need not impair the enterprise's performance, if plan targets are deliberately manipulated to accommodate this behaviour, nor hinder the success and advancement of management, if this is dependent upon plan fulfilment, nor the workers access to use-values, if this is only tenuously linked to the amount and quality of his work. Inefficient enterprises may well be criticised in the USSR but they are not closed down, their means of production removed and their labour dispersed to more efficient enterprises.

The outcome of production in the USSR, is intended to comprise solely of use-values. However, as a result of the antagonistic relations of production the result is an output comprised of two elements. Firstly, a usable portion that has a use-value for the society as a whole either as an intermediate or finished product for consumption or investment purposes. Secondly, an unusable portion that is waste and has no use-value (80). The determination of use-value and waste has both an objective and subjective element. Objectively, an electronic switch that does not work is waste but equally a pair of shoes that no one wants because they are of poor quality design, even though they could objectively function as shoes, are just as much waste as the switch. In the process of producing both waste and use-values society utilises both living labour and labour embodied in the means of

production. The end result is the same, some part of the socially expended labour time has resulted in no ultimate use-value for the society even though the labour embodied in it has been recompensed as if it were socially necessary. This therefore, limits the surplus available to the ruling group, extending apparently necessary labour time and reducing the surplus labour time of the workforce as a whole. This is not to suggest that only production under Soviet conditions is wasteful. Clearly under capitalism the antagonistic production relations lead to waste of a variety of forms. Again the discipline of the law of value will restrict the waste produced, from the point of view of the capitalist, and set into motion forces that will tend to eliminate wasteful production techniques and commodities. This is essentially the same point as that concerning negative control outlined above.

In the USSR this tendency does not exist in the realm of economic regulation as the automatic result of apparently impersonal forces. Wasteful production may reproduce itself, and administrative initiatives against it may succeed in specific instances but only temporarily displacing the problem elsewhere and such initiatives are continually necessary. The fundamental problem for the ruling group is that in the absence of the law of value, no unambiguous economic regulator exists that will simultaneously discipline the workforce and the enterprise management and provide the necessary correspondence and commensurability between labour time,

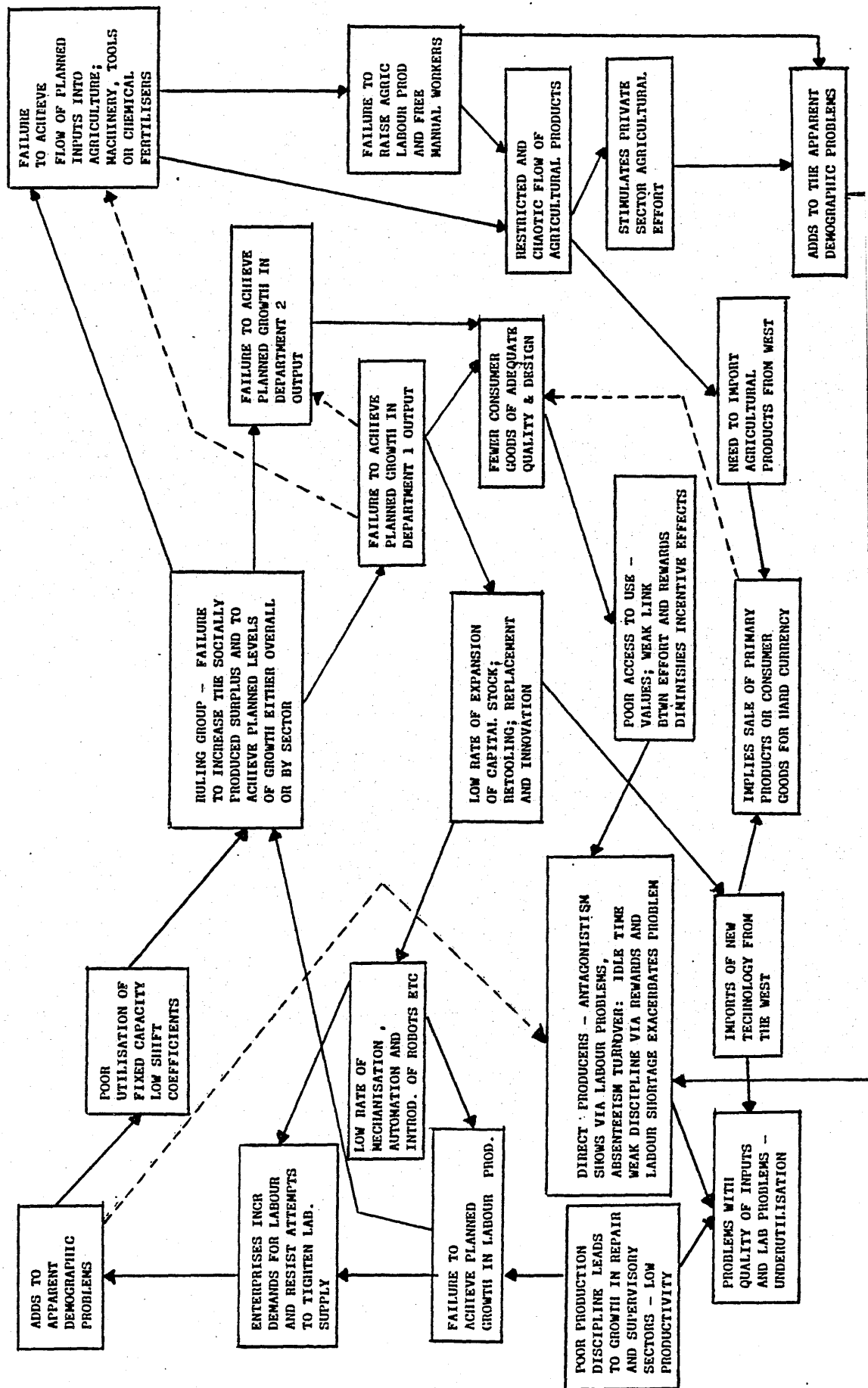
use-values produced and rewards. The consequence is that individual enterprises effectively appear as autonomous elements in the surplus extraction process, representing localised trade-offs between enterprise management and workforce, yet continuously subject to necessary administrative interference from the centre. The results of these antagonistic social relations of production in the USSR are considered in the next section.

SECTION 4: THE VICIOUS CIRCLE OF SOVIET ECONOMIC PROBLEMS.

So far the antagonistic nature of the social relations of production in the USSR have been presented and developed in a theoretical sense only. The concrete expression of these relationships produces a series of interconnected problems. Figure 1 attempts to describe these interrelationships and present them in a circular flow diagram. The unbroken lines in the figure represent the direct links between particular problems, whilst the broken lines are an attempt to identify the way in which problems feedback into other areas. This form of presentation, even though it understates the complexity of the linkages involved, is necessary for purposes of exposition and provides a framework for analysing these questions.

The central element in this analysis is the failure of the ruling group to achieve planned levels of economic growth, through the extraction of the socially produced surplus. This can be viewed as both the culmination of the process and its starting point from one time period to the next. This section will present a summary of the empirical evidence regarding these problems and will begin to trace out some of the linkages involved in Figure 1. Later sections will complete this analysis and show that the problems are phenomena that have been reproduced over time.

PRODUCTIVITY PROBLEMS



The recent experience of the Soviet economy has been characterised by a slow-down in overall rates of economic growth. The rapid growth rates of the 1930's and the post-war years of reconstruction, have given way to much more modest and decelerating rates of growth in the present period. This of course, ignores the question of the nature of growth itself. As Rakovsky pointed out in the early 1930's, quantitative growth may well be achieved at the cost of negative qualitative changes in production which may well cast doubt on the precise nature of the growth attained (81).

Table 6 indicates the general pattern of Soviet economic performance over the period since the second world war. It should be noted that from this perspective Soviet growth appears impressive. The general indicators do however, show a number of the distinctive features of Soviet development. Firstly, even though the gross social product and national income are still growing this is appreciably slower than previous periods. Secondly, there has been proportionally much higher growth in Department 1 than in Department 2, even though the ruling group has attempted to change this balance. Thirdly, growth in agricultural output is much more modest than growth in industrial output over this period. Fourthly, the stagnation in industrial output in the 1980's is mirrored in the output of both Department 1 and 2.

TABLE 6

GENERAL ECONOMIC INDICATORS (1940-1983) 1940=1

	1940	1960	1965	1970	1975	1980	1981	1982	1983
Gross Social Product	1	4.2	5.7	8.1	11	13.6	14	14.5	15.1
National Income	1	4.4	6.0	8.7	11.4	14.1	14.6	15.2	15.8
Basic Funds for Production									
In all Branches of the Economy	1	3.2	5.0	7.4	11.2	16	17	18.2	19.5
All Industrial Production	1	5.2	7.9	12	17	21	22	22	23
Production of Means of Production (Department 1)	1	6.6	11	16	23	29	30	31	32
Production of Consumer Goods (Department 2)	1	3.2	4.4	6.5	9	11	11	12	12
Gross Agricultural Production ¹		1.6	1.8	2.2	2.3	2.5	2.4	2.6	2.7
Capital Investment	1	6.4	8.7	12.5	17.5	20.8	21.6	22.3	23.6
No. of Workers & Office Workers	1	1.8	2.3	2.7	3	3.3	3.4	3.4	3.4
Productivity of Social Labour ¹	4	5.3	7.4	9.2	10.8	11.1	11.1	11.5	11.9
in Industry	1	3	3.7	4.9	6.6	7.7	7.9	8.1	8.4
in Agriculture	1	2	2.4	3.3	3.5	4	4	4.2	4.5
in Rail Transport	1	2.3	3	3.8	4.7	4.7	4.7	4.7	4.9
in Construction	1	2.9	3.7	4.5	5.8	6.4	6.5	6.7	6.9
Real Income per head	1	2.5	3	4	4.9	5.8	6	6	6.1

SOURCE: - "Narodnoe Khozyaistvo 1982", op.cit, pp 35-36
 "Narodnoe Khozyaistvo 1983", op.cit, pp 26-37

This generalised slow-down in growth can be confirmed from Table 7, where the annual average rates of growth of National Income and Gross Industrial Output are shown to have steadily deteriorated since the 8th Five Year Plan. Furthermore, the failure to meet plan targets in the current period is clearly indicated (82).

TABLE 7: Average Annual Rates of Growth (%)

<u>PLAN PERIOD</u>	<u>NATIONAL INCOME</u>	<u>INDUSTRIAL OUTPUT</u>
1961-65 7th	5.6	6.5
1966-70 8th	7.1	7.4
1971-75 9th	5.1	6.4
1976-80 10th	3.9	4.4
1981-1985 Plan	3.4 TO 3.7	
1981 (Actual)	3.2	3.8
1982 (Actual)	2	2.8
1983 (Actual)	3.1	

Sources: P.Khromov, Voprosy Ekonomiki, 1981, No.10, pp.17-18; Pravda, 24/1/82; 20/11/81; Vestnik Statistiki, 1984, No.3, p.73; V.Fil'ev, op.cit., p.13.

Failure to achieve planned levels of economic growth, either in the sense of failure to fulfill the overall plan or by failure to achieve individual sectoral targets, leads to three problems. The flow of inputs into agriculture will fail to reach planned levels, the output of Department 1, investment goods and Department 2, consumer goods will also fail to reach planned levels. The actual proportions will be dependent upon the sectoral distribution of the failure and the priority accorded to the various sectors by the ruling group, during the production period.

The restricted flow of inputs into the agricultural sector, already plagued by natural and climatic limitations (83) and experiencing a situation where greater amounts of investment yield smaller increments in output (84), will mean either that the supply of agricultural products will be reduced or made even more uncertain (85). This has a number of ramifications.

Firstly, the ruling group will be forced to import agricultural products from the west in order to maintain the necessary supply of foodstuffs to the workforce, hoping thereby, to reduce potential discontent and to maintain domestic stability. This will depend upon external sales of either primary products or scarce consumer goods to earn the necessary hard currency to purchase the imports. As a consequence it appears internally that the ruling group cannot resolve the agricultural supply question without western imports and externally it provides support to the argument that socialism has failed because the USSR cannot feed itself and has to rely on the west.

Secondly, the uncertain supply of agricultural products stimulates private sector agricultural efforts (86). This may operate directly to the detriment of the socialised sector as collective farm workers spend increasing time on their private plot. It may also reduce the flow of labour to the socialised sector in general, as older people and women will tend to the private plot rather than attempt to get part-time work. The failure of socialised agriculture

will bolster the private sector and legal and semi-legal markets and from the ruling group's viewpoint this will have a negative ideological effect. The practical impact is to add to the labour supply problems in the collective farm sector, as a result of this misdirection of effort. This is itself resolved in a particularly wasteful manner by drafting in industrial workers and students to assist in the agricultural sector particularly at harvest time. As Manevich has pointed out, in 1970 collective farms called upon other branches of the economy to supply 1.4 times more workers for harvest work than in 1960 and by 1978, 2.4 times more workers than in 1970 (87). Each worker stays on the collective farm for approximately one month and of the 15.6 million people involved, 7.8 million are drawn from branches of material production (88). This has a deleterious effect upon agricultural production, as the incoming labour is unfamiliar with the work and poorly motivated and performs with half of the productivity of permanent agricultural workers. Furthermore, as a basic worker is four times more effective at his own work than at agricultural work the loss to the economy is magnified (89). Also if 15.6 million people lose two days travelling to and from the collective farm then that is equivalent to a years work for 110,000 people (90). It also has a negative effect upon industrial production and encourages enterprise directors, as previously noted, to overestimate their demand for labour to cover this eventuality (91).

Failure to achieve planned growth in Department 2 output

leads directly to fewer consumer goods. This of course avoids the question about the desirability and quality of the output actually produced (92). Furthermore, if hard currency has to be obtained to purchase agricultural products, this places further constraints on domestic consumption. This is exacerbated by the fact that Soviet consumer goods destined for western markets have to be of higher quality and dependability than normal, if they are to be competitive and this further reduces the flow of consumer goods internally as a disproportionate amount of labour time will be expended upon them (93). As consumer goods include processed agricultural products, agricultural supply difficulties will further reduce the availability of consumer goods in general.

Taken together the failure to guarantee the supply of foodstuffs and consumer goods implies a shortage of the necessary use-values to motivate the Soviet workforce and consequently diminishes the incentive effects of any attempted reforms. In the period 1976-1980 wage funds and collective public consumption funds rose by 28% and collective farm wages rose by about 30% but consumer goods production only rose by 21% and retail trade turnover only rose 22% (94). This coupled with the problems of poor quality and unwanted goods give rise to the all-pervasive nature of the queue and the continuing difficulties in obtaining consumer goods.

Furthermore, the personal savings index now stands at its

highest level ever. For example, in 1980 the level of savings equalled R156 billion, 2/3 of which was demand deposits (earning 2% interest) and 1/3 was time deposits (earning 3% interest). Interest payments alone in 1980 totalled R3.5 billion (95). This level of savings would be sufficient to allow all those employed in the national economy to take 209 days of unpaid leave. By comparison in 1960 the level of savings would only have allowed 50 days of unpaid leave (96). To highlight the problems in consumer goods production it should be noted that the savings level in 1980 was equivalent to 7 months turnover in the retail trade sector (97). The problems of consumer goods production and the consequent increase in personal savings have a series of deleterious effects.

Firstly, the trading network, faced by continual shortages, will tend to lower its standards for quality and accept anything the producers will supply and then will be left with unsold goods (98). Therefore, the distribution network will not act to discipline the producers of shoddy goods. Secondly, the existence of considerable personal savings may explain the increase in the amount of time spent between jobs and the slowness with which youths are drawn into productive work. The argument here is that people moving between jobs can afford to wait before returning to work and live off past savings and youths can live at their parent's expense. Consequently, the failure in consumer goods production adds to labour productivity, labour discipline, and labour turnover problems as well as not

providing adequate incentives for those in work.

Failure to achieve planned growth in Department 1, investment goods, as already suggested will constrain the future production of both agricultural and consumer goods (99). It may also restrict present consumption if resources are diverted to prioritised sectors. However, there is a further impact because if the flow of investment goods is inadequate this will lead to three potential problems (100). Firstly, there will be problems in expanding fixed productive capacity at the existing technological level and providing the correct mix of equipment, plant, instruments and tools. The lack of basic implements in some sectors is the result of priorities being placed elsewhere. For example, in construction 30-35% of workers don't get the tools they require because they are not manufactured but have to be made by the workers themselves and this is extremely wasteful (101). In the trade sector for example, only about 60% of the demand for equipment is satisfied and much of this is obsolete and only 40% of the required spares are produced (102).

Secondly, the maintenance, replacement and re-tooling of present capacity will be jeopardised. Even though the USSR has the largest inventory of metal working equipment in the world its annual rate of renovation is only 2% to 2.7% and even if this is upgraded, as planned to 4%, it will take into the next century to renovate this critical

sector (103). As Kostin has pointed out, only approximately 30% of Soviet capital investment is channelled into reconstruction whilst the comparable figure for the GDR is 60% (104). Furthermore, in the USSR 50% of the machine tool inventory is located in repair shops which illustrates the problems of inadequate production techniques and poor quality inputs leading to a growing repair sector (105). The rate of retirement of fixed equipment throughout the economy is a measure of the dynamism of the capital formation process and in the USSR this rate has been declining, from 1.8% in 1970 to 1.3% in 1981 (106). This further reinforces the need for expenditure on repair, as approximately 30-40% of equipment has been in use for 15-20 years (107). As Abalkin suggests, functional but obsolete equipment represents wasteful production practices and it is no good to simply develop equipment extensively but it is essential to raise the technological level (108).

Thirdly, the failures also discourage innovation and process development. In 1981 even though 205,000 machine tools were produced only 10,000 of these were numerically controlled and only 830 sets of automatic and semi-automatic transfer lines were produced (109). The production of new robotic forms of equipment are also proceeding more slowly than desired (110). These difficulties are reinforced by a planning mechanism that often appears to penalise rather than reward innovation and management will opt for proven techniques rather than adopt riskier newer methods, supplies for which may be dubious

anyway. Planning from the achieved level reinforces these risk avoiding strategies on the part of plant management who have no direct personal interest other than plan fulfilment, achieved as easily as possible. This leads to further problems.

Firstly, low rates of innovation and process development have led the ruling group to turn to the west and import technology but this involves similar problems to those associated with agricultural imports, the need to earn hard currency etc. But the problems are magnified with regard to technology imports. Agricultural imports are invariably utilised but the technology imports are often inadequately utilised or even left idle. In 1973 there was 1.5 billion roubles of uninstalled foreign plant in the USSR and this rose by 500% in the period 1974-1979. In 1983 in the petro-chemical industry alone there was 845 million roubles of imported equipment lying unutilised (111). The long and troublesome history of technology imports can be explained, in the most general terms, as a result of western production processes being designed with western technology and inputs in mind (112). Consequently, the transplantation of processes into an alien environment will only be successful if the quality and flow of inputs is guaranteed. Interestingly the importation of western technology demonstrates the point made earlier regarding comparable manning levels. Manevich has pointed out that in the chemical industry, plant purchased from the west has led to the following manning levels; 1.5 times as many basic

production workers; 3.5 times as many engineering, technical and administrative staff; 8 times as many auxiliary workers (113). Recent Soviet criticisms of technology imports suggest that domestic innovation may well be more effective in the longer term. There is also a further dimension, in that the USSR technologically inferior, or worse dependent upon the west, is undesirable for the ruling group on both strategic and propagandistic grounds.

Secondly, and perhaps more importantly, failure to innovate exacerbates the impact of Department 2 failures on the rate of mechanisation and automation within the Soviet economy (114). This problem has a number of dimensions.

TABLE 8: Percentage of Industrial Labour Force Employed in Manual Work.

<u>1965</u>	<u>1972</u>	<u>1975</u>	<u>1979</u>	<u>1982</u>
40.4	35.4	34.6	32.8	30.2

Sources: L.A.Kostin, "Trudovye resursy v odinnadtsatoi pyatletke", Moscow, 1981, p.32; M.Ya.Sonin, EKO, 1977, No.4, p.5; L.A.Kostin, EKO, 1984, No.1, p.25.

Firstly, even though the number of mechanised shops, workplaces and enterprises is growing (115) and the proportion of manual workers has been consistently reduced as shown on Table 8, falling by more than 5% in the decade 1972-82, the absolute number of manual workers at the

beginning of the 11th Five Year Plan was still 40 million (116).

This problem is distributed unevenly throughout the economy. Danilov explains that the Central Statistical Agency classifies manual work in three forms;

1. manual labour where machines are utilised, for example loaders on conveyor belts.
2. manual labour without machinery, for example assemblers, auxiliary workers, loaders and unloaders.
3. manual adjustment and repair of machinery, for example, machine tool and equipment setters, repair mechanics (117).

The bulk of manual work is of the second category and is concentrated in particular industries like machine building, food and light industry and mining (118). Whilst 70% of basic production is mechanised this falls to 50% in construction work (119); 29% for auxiliary production and 22% for loading and unloading work (120). Only 20% of the work in the retail trade sector is mechanised and in 1983, in the RSFSR this sector only received 700 out of the required 3500, electrical loading devices (121). There are over 5 million people employed in heavy manual work connected with loading and unloading work alone (122). As Aitov pointed out, in the late 1970's, 50% more people were employed in loading and unloading work in trade organisations than there were employed in foundry and metallurgy work (123). In agriculture the proportion of

manual work is highest of all.

This poses two pressing problems. Firstly, unnecessarily large numbers of people are employed in relatively unproductive, unskilled manual labour with a consequent effect on overall rates of labour productivity. (This is made worse by the low level of technically substantiated norms in the sectors where manual labour is predominant, see section 6 below). Furthermore, while 6-10% of the basic workforce is unskilled this rises to 60% in the non-productive sector (124). It should be noted that employment in the non-productive sector has grown from 11.7% of the workforce in 1940 to 25.1% in the late 1970's (125). This trend has continued and in the period 1979-1984 employment in the non-productive sector (auxiliary, service and repair work) has grown by 33.8%, whilst employment in basic production has grown by only 12.7% (126). As already noted, the repair sector is a particular problem and at the beginning of the 11th Plan 3.9 million people were employed in repair work but only 400,000 of them were organised in specialist repair enterprises, therefore leading to considerable duplication, inefficiency and idle time (127). There is also a cost in terms of lost production as the following example suggests. In the late 1970's there were three times as many people and four times as much capacity engaged in making spares and repairing tractors as there were in basic production of new tractors (128). Furthermore, approximately 60% of construction workers are engaged solely in repair work (129).

Secondly, as the majority of these workers are drawn from the older age groups as they retire they will have to be replaced. Younger people are unlikely to want this type of work as their expectations have been raised by education. For example, 90% of the migrants from the countryside now have secondary education and want more than unskilled loading work, hence there are problems of potential discontent (130). This will lead to the misplacement of trained cadres and the combination of their frustrated expectations and heavy manual work will exacerbate labour turnover problems. The only real possibility is to mechanise these tasks but this process is itself contradictory.

Even though Soviet commentators call for increased production of robotic equipment it is highly uncertain that this would lead to any vast improvement in Soviet industrial performance. Firstly, even though the stock of robotic equipment is increasing much of it is left unutilised for long periods of time (131) and approximately 50% is left completely uninstalled (132). Secondly, successful utilisation of robotic equipment demands a higher degree of production discipline than currently exists in the USSR (133). Thirdly, robotic equipment requires reliable, standardised high quality inputs if it is to function efficiently (134). Constant breakdowns and inadequate spare parts simply add to costs and wastefulness. Furthermore, there is also evidence of worker hostility towards the introduction of robotic equipment and

sabotage attempts against the devices have led, in some plants, to them being cordoned off from the workforce (135). It is likely that present Soviet robotic equipment is comparable to first generation simple manipulators which are technologically inferior to the third generation equipment now in increasing use in Western Europe, the USA and Japan.

A common complaint is that the design of Soviet robotics is not closely co-ordinated with industrial needs and that single isolated units are wasteful and irrational (136). Parasyuk, points out that the allocation of new technology is often undertaken in a formalistic sense, simply to fulfil the plan for new technology, without thinking out the implications for the whole work environment (137).

Furthermore, as Aganbegyan suggests, machine building in general is declining in absolute physical unit terms and he identifies the cause of this problem as difficulties in the metallurgical industry (138). He points out that in a five year period between R10 and R12 billion were spent on repairs whilst only 5% of this amount was spent on developing this industry (139).

The disproportional mechanisation of basic production and auxiliary tasks is maintained because 80% of funds available to enterprises for mechanisation go on basic production and only 20% on

auxiliary production and designers spend more time considering the mechanisation of basic production (140). However, measures to mechanise auxiliary production are 2.8 to 3.5 times more effective than similar measures effecting direct production. For example, it has been estimated that R1 million spent on new technology will have the potential to release 137 people if spent on mechanising processing work; 170 people if spent on mechanising foundry work; but 476 people will be released if it is spent on transport, loading and unloading operations (141). In machine building itself it takes R10,000 to free one manual worker from basic production but only R3,000 to free one auxiliary worker (142). Enterprises tend to give a low priority to freeing auxiliary workers for two reasons. Firstly, freeing auxiliary workers will not necessarily make plan fulfilment any easier and may even impinge on it if it reduces the pool of labour available for tasks like harvesting work or construction assignments for the local Soviet. Furthermore, there is no guarantee if one enterprise acts in a responsible way that others will follow its example. Secondly, the labour released is liable to be unskilled or relatively low skilled therefore, the advantage is again minimised from the enterprise point of view. Unless the plan specifically penalises the enterprise there is no incentive to release auxiliary workers.

The low priority accorded to this problem at enterprise level is reproduced at the aggregate level. Organisationally, the machinery for auxiliary work is

produced at 400 different enterprises which are the responsibility of 40 different ministries and only 15% of the output is centrally planned. Consequently, enterprises are forced to produce much of their own requirements of auxiliary equipment and tools and estimates have suggested that approximately 75% of requirements are produced in this manner (143). This again is wasteful of capacity and reduces labour productivity. Manevich makes a similar point with regard to the production of specialised industrial instruments. In the machine building industry they are produced in 420 different plants, employing 460,000 workers. However, if the work was rationalised and specialised the same volume of output could be produced by 175,000 workers (144).

The desired impact of increasing mechanisation plus the introduction of industrial robots etc., is to increase labour productivity, labour discipline and release manual workers but this is problematic. Mechanisation in itself does not necessarily automatically bring these advantages. The mechanisation of production takes place within the context of a particular social system and it is this which determines the eventual outcome of the process. For example, as already noted, the importation of western technology does not necessarily raise labour productivity nor produce comparable manning levels. Likewise as Dzokaeva points out the introduction of computers into accountancy sections does not necessarily lead to lower staff levels, less paperwork nor more efficiency (145). An example cited

by Khromov, illustrates the point, that the re-tooling and re-equipping of Soviet enterprises need not diminish the workforce (146). In 17 refurbished Moscow enterprises 10 envisaged an increase in the workforce of, on average, 16%; 3 had no plans for change; only 4 indicated a reduction in the workforce. Furthermore, once mechanised equipment is available it too needs to be utilised efficiently. Balashov points out, that in the USSR machinery is often used unnecessarily for jobs that could be accomplished better manually and the net result is more waste (147).

Mechanisation will only lead to a tightening of labour utilisation, increasingly intensive exploitation and a growing extracted surplus if the socio-economic mechanism forces that conclusion. If it does not then mechanisation may well lead to the more wasteful utilisation of capacity. Modern automated equipment needs to be utilised on a 3 shift basis if it is to justify its costs of production however, shift coefficients in many sectors of the Soviet economy are low and declining (See Appendix A). This question will be returned to after a consideration of the complementary problems of declining labour productivity and labour discipline.

SECTION 5: LABOUR PRODUCTIVITY AND THE SURPLUS.

It was argued in Chapter 1 that the socially produced surplus can be expanded in one of two ways. Firstly, it can be expanded in the absolute sense by increasing the volume of labour inputs either by employing more people in the socialised sector of the economy or by increasing the length of the working day or the working week. Secondly, it can be expanded relatively by increasing the productivity of already employed labour, reducing necessary labour-time and extending surplus labour-time. During the course of economic development in the USSR these processes have operated simultaneously and growth in output is a result of both an increasing absolute and relative surplus (148). This is illustrated in Table 9.

TABLE 9: Growth in Industrial Production Accounted for by Productivity Increases.

1st Five Year Plan	51%	9th Five Year Plan	84%
2nd Five Year Plan	79%	10th Five Year Plan	75%
War Years and 4th	69%	11th Plan (Planned)	90%
5th Five Year Plan	68%	1981 (Actual)	62%
6th Five Year Plan	72%	1982 (Actual)	61%
7th Five Year Plan	62%	1983 (Actual)	80%
8th Five Year Plan	73%		

Sources: "Narodnoe Khozyaistvo", op.cit., p.36; V.Fil'ev, op.cit., p.13; Vestnik Statistiki, 1984, No.4, p.69.

However, the possibilities of increasing the absolute surplus have been much restricted since the mid-sixties. This is a result of a series of factors. Firstly, there has been a reduction in the natural growth rate of the population, even though the birth rate has risen recently, as indicated in Table 10.

TABLE 10: Birthrate, Deathrate and Natural Rate of Population Growth (per 1000 population).

	<u>Birth Rate</u>	<u>Death Rate</u>	<u>Nat Growth</u>
1940	31.2	18	13.2
1960	24.9	7.1	17.8
1965	18.4	7.3	11.1
1970	17.4	8.2	9.2
1975	18.1	9.3	8.8
1980	18.3	10.3	8
1981	18.5	10.2	8.3
1982	18.9	10.1	8.8
1983	20.1	10.3	9.8

Sources: "Narodnoe Khozyaistvo", op.cit., p.30; Vestnik Statistiki, 1984, No.4, p.67.

Furthermore, the average annual rate of growth of the number of workers in the economy as a whole, has continued to decline, as shown in Table 11.

TABLE 11: Average Annual Growth Rate of Workers and Employees Employed in the Economy (%).

1929 to 1932	20.6	1956 to 1960	4.4
1933 to 1937	13.4	1961 to 1965	4.4
1938 to 1940	5.9	1966 to 1970	3.2
1946 to 1950	7.2	1971 to 1975	2.5
1951 to 1955	4.4	1976 to 1980	2

Source: "Obshchestvennaya forma truda pri sotsializme", A.D.Smirnova and K.Sabo (Eds), Moscow, 1984, p.246.

When the industrial workforce alone is considered the decline in growth is even more stark, as Table 12 indicates.

TABLE 12: Average Annual Rate of Growth of Industrial Workforce.

1951 to 1955	4.2	1971 to 1975	1.1
1956 to 1960	2.9	1976 to 1980	1.1
1961 to 1965	2.5	"1982"	1.3
1966 to 1970	2	"1982"	1.1

Source: V.Fil'ev, op.cit., p.15.

The growth in the population of working age was approximately 18% for the decade 1971-1980 but it is unlikely to exceed 4% in the decade 1981-1990 (149). This has been accompanied by an increase in average life expectancy that has led to a change in the age structure of

the population and consequently led to a larger proportion of the population reaching a pensionable age (150). Pensioners now number 50 million in comparison with 4 million in 1941, 19 million in 1968 and 31 million in 1978 and now account for almost 20% of the population (151).

Secondly, the flow of the surplus population from the rural areas to the towns has slowed appreciably. In the period 1961-1970 the agricultural labour force was reduced by a yearly average of 240,000 workers but by the period 1971-1977 this had fallen to 143,000 (152). The only surplus rural population now identified by Soviet demographers is in the Central Asian regions (153). The question of surplus population is more complex and will be returned to in section 7 below.

Thirdly, the participation of women in the economy is high, see Table 13, and little further increase to the workforce can be expected from this source without for example, even larger social expenditures on nursery provision (154).

TABLE 13: Average Number of Women Workers and Employees in the Economy.

<u>Numbers in thousands</u>		<u>As (%)</u>
<u>1940</u>	13,190	39
<u>1950</u>	19,180	47
<u>1960</u>	29,250	47
<u>1970</u>	45,800	51
<u>1980</u>	57,569	51
<u>1983</u>	59,350	51

Distributed in particular sectors: Trade and Collective Food provision 83%; Education 75%; Culture 74%; Public Health, Sport and Social Services 82%.

Source: Vestnik Statistiki, 1984, No.1, p.65.

A further possibility which has been discussed is an extension of out-work but the opportunities for this are limited to the production of simple goods and this cannot provide a long term solution (155). Attempts have also been made to draw pensioners back into production and pressure has been exerted on enterprises to encourage them to provide more opportunities for part-time work, whilst allowing the retention of pension rights, particularly for specialists (156). Even though the pensions of workers and employees have more than doubled in the period 1965-1980 and risen by more than 230% for collective farm workers, surveys suggest that over 50% of pensioners would like to remain in social production and the vast majority suggest that this is for economic reasons (157). Of those who want to work 43% want part-time work while 7% would like to work at home but only 7 million pensioners are actually employed (158). The major difficulty is organisational and at the enterprise level it is proving difficult to provide the flexibility to arrange part-time work.

Increasingly, increments to the workforce depend upon young

people being drawn into production, to some extent before they have finished their formal schooling (159). In 1961-1965 they accounted for only 30% of new workers; by 1966-1970 the proportion had risen to 57%; by 1971-1975 it had risen further to 92% and the proportion is rising (160). This has to be viewed against a background of increasing reluctance, on the part of young people, to enter the world of work, with higher education being the preferred post-school route (161).

Attempts have also been made to increase the labour time expended in an absolute sense by the use of voluntary labour days, the results of which are earmarked to improve social provision like health and educational facilities (162). However, this cannot be a lasting solution and is more symbolic than realistic. The real problem is not extensions of the absolute size of the workforce, extensions of the working day or year, nor is the problem demographic. The real problem is the ruling group's inability to increase the relative surplus extracted from the already employed direct producers.

Labour productivity growth is the major method for attaining economic growth and from a Marxist perspective the ability of a social system to enhance the productivity of human labour is some measure of its progressive nature. Once again from a long term perspective Soviet achievements appear impressive and labour productivity has risen by a

factor of fifty since the October Revolution (163). Since 1940, the level of labour productivity overall, has risen more than eleven times, as illustrated in Table 6. It should be noted that overall levels of productivity have risen faster than the component parts due to the structural change in employment that occurred in this period which is demonstrated in Table 14.

TABLE 14: The Relationship Between Employment in Industry, Agriculture and Construction (%).

	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>
Total Employment	100	100	100	100	100	100	100
Industry and Construction	35	40	52.5	63	65.5	69	68
Agriculture	65	60	47.5	37	34.5	31	32
For every 100 in Industry Number in Agriculture	186	150	90	58	53	43	42

Source: A.D.Smirnova and K.Sabo (Eds), op.cit., p.247.

A shift away from agriculture towards industry where productivity was higher, accounts for this feature (164). Again a number of elements are worthy of comment. Labour productivity has advanced more rapidly in industry than in agriculture and production of national income per worker is twice as high in industry as it is in agriculture (165). All the indices show a tendency towards stagnation. This needs to be placed in some comparative perspective. Soviet statisticians have calculated that Soviet labour

productivity is approximately 40% of the US level overall and this rises to 55-57% if industry is considered alone (166). Soviet labour productivity grew by a yearly average of 4.2% in the period 1971-1982, while in the UK the figure was 3.6% (167). The problem is that now growth via raising labour productivity is of prime importance, the rate of growth is slowing down. The pattern of declining annual labour productivity growth in industry is shown in Table 15. The same pattern emerges when labour productivity growth is considered alongside industrial production and workforce growth over the last five Plan periods as in Table 16. As already pointed out, in Table 9, the planned increments to production to be achieved by productivity growth are not being met in the 11th Five Year Plan period. Furthermore, the decline can also be demonstrated in relationship to the link between labour productivity and growth in the capital stock, as shown in Table 17. In comparison with other Comecon countries the USSR has both a lower labour productivity growth for a 1% growth in the capital stock and it has been declining consistently since the 8th Five Year Plan.

When industry is considered alone the average annual rate of growth of labour productivity was 6% in the 9th Five Year Plan (1971-75) but fell to 3.2% during the 10th Five Year Plan (1976-80) (168). During the first two years of the 11th Plan (1981-85) labour productivity growth in industry was scheduled to rise by 6.3% but only actually grew by 2.7% in 1981 and 2.1% in 1982 (169) and by 1983,

TABLE 15.

RATE OF GROWTH OF INDUSTRIAL LABOUR PRODUCTIVITY.

1967	6.7	1973	6.1	1979	2.4
1968	5.2	1974	6.3	1980	2.6
1969	4.8	1975	5.9	1981	2.7
1970	7.0	1976	3.3	1982	2.1
1971	6.3	1977	4.0	1983	3.5
1972	5.2	1978	3.6		

Source: P.A. Khromov, op. cit., p.13. V. Fil'ev,
op. cit., p.17, Vestnik Statistiki, 1984,
No 3, p.73.

TABLE 16.

DECLINING PRODUCTIVITY, PRODUCTION & WORKFORCE GROWTH.

Year	Average Annual Rate of Growth (%)			Proportion of Growth due to Labour Productivity Increases (%)	Average Annual Growth of Industrial Production Personnel (000's)
	Industrial Production	Industrial Labour Productivity			
1961-65	8.6	4.6	62		965
1966-70	8.5	5.8	73		829
1971-75	7.4	6.0	84		492
1976-80 (plan)	6.2 - 6.8	5.4 - 6.0	90		300
1976-80 (actual)	4.4	3.2	75		565
1981-85 (plan)	-	3.2 - 3.7	90		-

Sources: E.S. Rusanov, op. cit., p.79; P.A. Khromov, op. cit., p.16.

TABLE 17

GROWTH IN LABOUR PRODUCTIVITY FOR 1% GROWTH IN CAPITAL STOCK.

<u>COUNTRY</u>	<u>1961-1965</u>	<u>1966-70</u>	<u>1971-75</u>	<u>1976-80</u>
Bulgaria	0.63	0.78	0.84	0.73
Hungary	0.82	1.33	0.94	0.49
GDR	0.54	1.08	0.91	0.67
Rumania	1.16	0.68	0.95	0.66
USSR	0.63	0.93	0.57	0.47
Czechoslovakia	0.33	1.76	1.04	0.58

SOURCE: - V.E. Aper'yan, "Sotsializm' Nasilenie Ekonomika", Moscow, 1983, p.189.

although it had increased to 3.5% it was still well below planned levels (170). The significance placed upon labour productivity growth over the last ten years can be gauged from the following extracts from the Guidelines to the 10th and 11th Five Year Plans.

"To concentrate special attention on the accelerated growth of the productivity of labour, an especially important condition for the further development of production and an increase in the people's well-being. To guarantee through higher labour productivity 85-90% of the increment in industrial production, the entire increment in agricultural production and construction and at least 95% of the increment in the volume of rail cargoes" (171).

The 11th Plan reiterates these ambitious targets and aims,

"to raise the productivity of social labour by 17-20%, obtaining at least 85-90% of the increment in National Income in this way" (172).

The 11th Plan calls for higher rates of productivity growth than those achieved in the 10th Plan but the results for the first two years show that, just as the 10th Plan failed to reach the planned increase, the 11th Plan appears to be heading the same way, see Table 9. The individual indicators, shown in Table 18, show the low rate of productivity growth. As Andropov pointed out at the CPSU

TABLE 18.

Rate of Growth of Labour Productivity - The 11th Five Year Plan.

	<u>1981-82</u>	<u>1983</u>
Social Labour Productivity	102.9	103.7
Industrial " "	102.4	103.6
Agricultural Labour Productivity	101	111
Rail Transport " "	Zero Growth	103.7
Construction " "	102.3	103.1

SOURCE: Vestnik Statistiki, 1984, No. 4, p.69. 1984, No. 12, p.p. 68-69.

plenary in November 1982, labour productivity was still not growing quickly enough (173). It should be remembered that a 1% increase in labour productivity in the agricultural sector yields a R1 milliard increase in output and a 1% increase in industrial labour productivity yields a R7 milliard increase in National Income (174). By June 1983, Andropov was still arguing that,

"The key task in the economic sphere is an increase in labour productivity" (175).

There is however, a further dimension to this problem. The Plan Guidelines for 1981-85 stipulate that productivity growth in the economy must exceed wage rises (176). In the 10th Plan the relationship between wage rises and labour productivity growth did not maintain its planned proportions. As Karpukhin points out, the increase in average wages per 1% increase in productivity was 0.69%, rising to 0.84% when sums allocated to wage rises are included. In some sectors, coal mining for example, productivity fell but wages continued to rise and in a number of branches average wages rose faster than productivity growth (177). This situation has been replicated in the early years of the 11th Plan. In 1981 labour productivity in industry grew by 2.7% and average wages rose by 2.3%, in 1982 labour productivity grew 2.1% and average wages rose by 3.5%. As Kostin has noted, the growth in the average wage has been 0.85% for each 1% increase in labour productivity in comparison with the

planned growth of 0.63% (178). A later source, reproduced in Table 19, adjusts these figures for 1981-1982, but shows the clear tendency for labour productivity to decline and the increase in the average wage per 1% increase in labour productivity to rise.

As Andropov pointed out,

"wage increases that are not closely linked to increases in labour productivity will ultimately have a negative effect on all economic life" (179).

The negative effects refer to the further erosion of the incentive effects of money wages. If wages rise without comparable increases in production then they will not lead to access to use-values. Furthermore, this process will lead to a further erosion of the socially produced surplus if Soviet labour can continue to press average wages upwards and simultaneously retard productivity growth. Hence the pressure is on for increasing labour productivity but this has to be achieved against the background of significant labour problems.

TABLE 19

Relationships Between Increases in Labour Productivity & Average Wages.

	<u>Increase in Labour Productivity</u>	<u>Increase in the Average Wage</u>	<u>Increase in Average Wage per 1% Increase in Labour Productivity</u>
1951-55	49	11.3	0.23
1955-60	37	16.8	0.45
1961-65	25.7	13.4	0.52
1966-70	32.2	21.6	0.67
1971-75	34	25.6	0.76
1976-80	17	14.3	0.84
1981	2.7	2.54	0.94
1982	2.1	2.8	1.33

SOURCE:- V. Fil'ev, op. cit., p.17.

SECTION 6: THE CONTINUING PROBLEMS OF LABOUR DISCIPLINE

The antagonistic social relations of production, which form around the surplus extraction process in the USSR, express themselves most directly through a variety of labour discipline problems. These are central to the explanation of the slow down in economic growth provided in Figure 1 and they need to be placed in context.

Firstly, they cannot be treated as a peripheral problem, as it was suggested earlier that they are by both Soviet political economists and their western acolytes. The Andropov discipline campaign, initiated only ten days after his election as General Secretary of the CPSU, indicated the centrality of these problems and their impact on economic performance. Andropov's analysis locates the source of the problems within the present functioning of the socio-economic system.

"It is necessary to create the conditions, economic and organisational that will stimulate good quality productive labour, initiative and enterprise. Conversely poor work, idleness and irresponsibility must have an immediate and inescapable impact upon the remuneration, job status and moral authority of personnel We must wage a more resolute struggle against all violations of state, party and labour discipline" (180).

The tenor of his comments indicates that those economic and

organisational forms are absent and the correspondence between work and rewards is tenuous. Chernenko has in no way repudiated this analysis and when accepting his election as General Secretary stated,

"The question of organisation and order is a key fundamental question for us. Any disorderliness and irresponsibility is costly to society it is quite natural that the measures the party has adopted with a view to improving labour, production, plan and state discipline have received truly nationwide approval" (181).

The present leadership recognises that declining productivity and the consequent poor economic performance, can only be reversed if workforce attitudes and practices are changed. This message is equally forcefully articulated in the speeches of Gorbachev since becoming General Secretary (182).

Secondly, these problems are not transitory. The theme of maintaining and improving labour discipline occurs continually in the writings and speeches of Chernenko and Andropov before him and reflects a modern tradition going back to the reforms of the mid-1960's (183). However, even though these problems have been identified they have proved resilient to both administrative efforts designed to combat them and attempts at moral exhortation and have been reproduced over time. The view that these problems would be alleviated as the economy and the workforce became more

sophisticated seems unproven. In fact the impact and extent of the problems appears to be growing as a consequence of the increasingly sophisticated technology. For example, as Brezhnev pointed out, it is bad enough from a social point of view if a worker, provided with a shovel does not work consistently and well. The problem however, is magnified if the worker is operating sophisticated machinery (184). The social investment in the machinery, represents previously expended labour time which has been embodied in equipment, but which now fails to produce the expected increase in production. Therefore, the same infraction of labour discipline now has a greater impact. As the previous section indicated, it is precisely over recent plan periods that the decline in productivity growth has taken place.

Thirdly, these problems are not unique to the USSR but are replicated elsewhere in Eastern Europe (185), and in the capitalist west (186). It is therefore, feasible to argue that these problems are common to social systems based upon exploitative social relations of production and represent the common response of the direct producers. This is not to argue that the USSR (or the rest of Eastern Europe) is some variant of capitalism. As was pointed out in Chapter 1, exploitative relations of production occur in differing modes of production and take particular forms. The question is rather to understand the form the problems take, their impact upon the system, the methods by which the ruling group attempt to curb them and their degree of success in this endeavour. It is these relationships that determine

the nature of the socio-economic system not the simple existence of labour problems. In a specific sense for this thesis, an understanding of these problems provides an explanation of the motives of the ruling group in initiating the Shchekino experiment, the form that it took, its later variants and the parallel experiments.

Labour problems in the USSR take a variety of forms all of which, regardless of cause or motivation, result in a reduction of the socially produced surplus. According to a survey of enterprise directors, cited by Kolodizh, they see labour discipline problems as the major constraint on raising production (187). Firstly, there are a series of problems concerning the length of the working day, all of which reduce the volume of expended labour-time and hence reduce the volume of the absolute surplus.

"A major reserve for raising labour productivity is strengthening labour discipline, cutting losses in labour-time due to shirking and absenteeism, tardiness and premature departure from work and inadequate organisation leading to overly long meal breaks" (188).

The statistical data available, according to idle-time records, suggests that this amounts to 0.1% of the working day per worker or between 1 and 2 minutes per day (189). However, as Sonin points out, the true picture of intra shift idle-time is not fully recorded and the recording of work-time losses generally is inadequate (190). The real

losses only emerge from survey work and Soviet authors suggest that it might in reality be as high as 15-20% of the working day (191). A further estimate suggests that for every 100 Soviet workers 30 are absent from their place of work for an average of 1.6 hours per day (192) and at any time 1 million workers are idle at work (193). Volgin, reporting surveys carried out at 245 Moscow enterprises, comments that some enterprises only have 10% of their staff at work for the last hour of the working day (194). Rusanov, points out that even if idle time only accounts for 2.5-3 days loss per worker, per year, in industry this would amount to a loss of 91.5 million days (195). The significance of time losses is substantial and according to Soviet estimates saving 1 minute of labour time adds 1 million roubles to production or is equivalent to the loss of a days work by 200,000 workers (196).

It is inadequate to ascribe these losses to human nature. The reasons have to be located within the work situation of the Soviet worker and the operation of the economic mechanism. As has already been suggested labour discipline infractions need not necessarily affect the individual's access to use-values. Nor do they necessarily attract disciplinary sanctions from management, who can justifiably argue that it is better to have a worker who turns up late and leaves early than no worker at all (197).

One explanation that has been offered for these problems of attendance and time-keeping is the chaotic nature of the

service sector. The necessity to queue and wait for repair services could provide an explanation for the time spent away from production and according to the survey cited by Volgin, 70% of workers taking time off claimed it was because services were unavailable when needed (198). However, this avoids the question of why the service sector is chaotic. As the respondents to the EKO's questionnaire on labour discipline pointed out, the root of the problem is poor organisation and labour discipline in this sector as well (199).

It is not only part day losses that are important but also whole day absenteeism which again reduces the volume of expended labour time and the absolute surplus. This has been a long term problem in the USSR. For example Sosin estimated that in 1973 52 million man days were lost due to absenteeism (200) and Manevich cites a figure of 59 million for the previous year (201). Contemporary sources suggest that presently absenteeism accounts for about 20 days per worker per year (202), three quarters of which is due to sickness and one quarter simply due to non-appearance (203). Sonin again complains that absenteeism is underreported and complains that time is often wasted on Party, Trade Union, Komsomol or local Soviet functions (204). Varavka suggests that there are few checks on workers leaving the enterprise for fire brigade or militia duties and this form of absence is often spurious (205). Furthermore, management may well give approval for absenteeism on spurious grounds to either maintain their

workforce or to compensate workers for overtime necessary because of storming and poor work organisation. (206). The combined result of absenteeism, idle-time within shifts and administratively authorised absence means that industry loses on average the labour of 170,000 workers per day (207).

Again the effects of the problems of absenteeism have to be viewed in the context of the economic mechanism. One of the results of idle time and absenteeism is that arhythmic work patterns are established which necessitate storming and overtime at the end of the month. The result of this, as one survey showed, is that conscientious workers ended the year with an average wage of 230 roubles per month whilst discipline violators, because of overtime working, were able to supplement their wage and had an average wage of 226 roubles (208).

The example of the construction industry illustrates another aspect of this problem. Between 10-30% of the losses in work-time are due to discipline infractions and according to surveys one third of these problems are related to alcohol abuse (209).

Alcohol related problems affect both the absolute surplus and the relative surplus because they are a major influence upon both absenteeism and productivity. Sonin, citing a survey in Magnitogorsk points out that absenteeism is 3 to 3.5 times greater after holidays and pay days and

is ususally drink related (210). A review of the problem in Molodoi Kommunist points out that in 1925 11% of workers were chronic alcoholics but suggests that currently 37% of workers regularly drink to excess and this has contributed to the increase in death rates and the high level of industrial accidents (211). In the RSFSR a half of all fatal accidents and one quarter of all industrial accidents are drink related (212). Sosin, citing a survey in Krasnoyarsk, suggests that labour productivity in industry is 20-30% reduced on Mondays and days following holidays and pay days due to the effects of drink (213). Alcoholism is strongly related to absenteeism problems and it has been estimated that 1% of all industrial and construction workers are absent per day because of drink problems (214). A further study has suggested that 9 out of 10 cases of absenteeism are drink related and that a 10% increase in productivity would be achieved if on-the-job drunkenness could be eliminated (215). Furthermore, 46 out of every 100 alcoholics begin their history of drink problems at work (216).

In the conditions of an apparent labour shortage the unsolved problems of alcoholism result in problem workers simply moving from one plant to another. Again enterprise management may adopt the view that workers with drink problems are better than no workers at all (217). Zaigreyev even goes so far as to suggest that alcoholism is the source of the labour shortage problem (218). This is a simplification of a more complex problem that cannot be

reduced to a single cause but alcohol related problems are a significant contributory factor.

Labour turnover presents the ruling group with a considerable problem that has long been recognised by the Soviet leadership (219). This problem affects both the absolute surplus and the relative surplus as it reduces both the absolute number of days worked but also reduces the intensity of that work for some period of time. The increasingly technological nature of the production process and the fragmentation of labour tasks which arises as a consequence, necessitates constant co-operation between individuals in production. A stable workforce, as well as providing continuity in production, will enable an accumulation of technical and production skills on a collective basis (220). Furthermore, this will provide, according to Soviet writers, the correct psychological environment within the enterprise, generating a collective ethos of self-discipline and achievement which will be receptive to schemes aimed at increasing labour productivity, the quality of production or enhancing socialist competition (221).

However, it has been estimated that currently labour turnover is in excess of 20 million persons per annum and this accounts for approximately 1/5 of the employed workforce, excluding collective farm workers (222). In some enterprises labour turnover is as high as 25-30% of the workforce per annum in comparison with the estimated

desirable level of necessary turnover, defined by Soviet writers to be between 5% and 8% (223). The average time between jobs ranges from 30-31 days for industrial workers to 28 days for construction workers with consequent losses in production (224). It has been estimated that this rises to 2 months when migration between cities is involved (225). This is exacerbated by the decline in productivity that occurs prior to moving between jobs which it has been estimated at 15-25% for piece-rate workers and 50% for time-rate workers (226). Also there are losses in productivity during the settling in period in the new job which it has been calculated can take up to 3 months on average and results in a 10-20% reduction in productivity (227). To these losses have to be added the costs of retraining as over two fifths of those who change jobs also change occupation (228). As Kostin notes, workers often do not master the skills of one job before moving on to another (229).

There are however, further problems as high levels of turnover undermine labour discipline in the enterprise. A shifting workforce will be more difficult to discipline and to motivate than a stable one and if spontaneous turnover is easy then disciplinary sanctions will be avoided by simply moving jobs. Furthermore, management, faced by apparent labour shortages will be less inclined to press disciplinary measures if workers simply leave and will understate personnel turnover when it occurs (230). There is also evidence that attempts at increasing the intensity of

work by raising work norms leads to increased levels of turnover (231).

Labour turnover also presents a significant regional problem and it has been estimated that labour turnover in Siberia and the Far Eastern regions is between 1.5 and 2 times higher than in the European regions of the USSR (232). The problem is actually made worse by the fact that the USSR needs to encourage both inter-enterprise and inter-region flows of labour. The apparent labour shortages in both urban areas and Siberia, demand a degree of labour mobility but this needs to be planned and controlled if it is to be economically viable (233). The problem is that current labour turnover is largely unplanned and spontaneous. According to Maslova, the ratio of organised to individual forms of manpower redistribution is about 1:4 and this rises to 1:9 in the case of regional redistribution (234). The problem is also acute in agriculture. Kostakov, provides an interesting example of the type of problem when he points out that in a decade 10 million machine operators were trained but by the end of the decade the actual number employed had only risen by 1 million (235). (Given the disparities between urban and rural work, payments and living standards, outlined briefly in Chapter 1, this is not surprising).

From the point of view of the individual worker labour turnover may well be rational if he can materially improve his working conditions, living conditions or rewards.

Kotlyar and Talalai suggest that between 30-50% of labour turnover, may well be rational from this perspective (236).

The labour problems identified so far, idle-time, absenteeism, alcoholism and spontaneous labour turnover, are the individualised response of Soviet workers to their position in the process of surplus extraction. They lack any meaningful direct control over production decisions, they cannot organise independently in Trade Unions and cannot express discontent via a political process hence their dissatisfaction in part, takes the form of spontaneous and individualised actions. The end result of this is that these responses amount to significant negative control over their own labour process as both the absolute level of labour time expended and its intensity is controlled by their actions. As Ticktin argues this degree of atomised control over the labour process is a direct corollary of the political atomisation necessary for the maintenance of the Soviet ruling group and in a sense is the price they pay for the form of political control they enjoy.

Survey work in the USSR confirms this perspective. For example, the reasons for labour turnover emerge clearly from the survey form issued by the State Statistical body in 1981 (237); dissatisfaction with occupation, poor work rhythm and organisation, heavy physical labour, monotonous work, poor work conditions, poor pay, poor or non-existent training, inadequate living, social and cultural conditions

etc. These problems are confirmed by the localised survey work reported in the Soviet literature (238). Furthermore, the characteristics of these problems tend to vary in relation to the worker's age, marital status, sex, length of service etc., (239).

Compounding this, the lack of correspondence between work and eventual rewards reinforces this tendency for workers to vote with their feet or work as little as possible (240). The culmination of this activity is to contribute to the creation of an apparent labour shortage which further weakens management control and further exacerbates the vicious circle of problems. The irony of this is that the existence of an apparent labour shortage encourages enterprises to compete for workers and poach from each other which further exacerbates the problems associated with spontaneous turnover (241). Before considering the question of labour shortages however, it is necessary to consider the central controlling mechanism in the surplus extraction process itself.

As pointed out in the opening chapter, all social systems based upon hierarchically ordered, exploitative relations of production are faced by the problem of ensuring that the direct producers actually produce an increasingly large relative surplus. In the USSR this antagonistic relationship between the ruling group and the direct producers emerges most clearly around the question of work norms. Work norms have a special significance as they are

an attempt to control the pace and intensity of work and thus determine the volume of the surplus. Furthermore, they are the only method through which different types of labour, of differing complexity and in different branches of production, can be evaluated. This complex problem can best be explained via a comparison with capitalism.

Under the capitalist mode of production concrete labour, either unskilled, simple labour or skilled, complex labour, is reduced to abstract labour through the operation of the law of value. As already suggested, the existence of the market acts as the eventual arbiter of whether or not the expended labour time embodied in particular commodities is the average socially necessary for their production. This acts to regulate expenditures of concrete labour within capitalist firms. The efficient exploitation of human labour power will flourish whilst the inefficient will fail. Furthermore, it provides a means whereby different expenditures of concrete labour are reduced to their common essence and thereby made commensurable. The scope of this commensurability and the breadth of economic regulation is determined by the scope of the market and its freedom from external regulation, intervention and monopolisation. Abstracting from these layers of problems what has been identified is the underlying essential tendencies. Consequently, for the individual capitalist the regulation of labour time is not determined in an arbitrary manner but is consequent upon the externally generated compulsion to accumulate which operates through the law of value. A

similar point was made earlier with regard to both negative control and wasteful production technique. This is not to argue that the capitalist labour process is free from its own contradictions and problems. Nor is it to suggest that the individual capitalist does not attempt to measure work or 'scientifically' control its pace. It is simply a recognition of the fact that his action corresponds to the underlying logic of capitalism and his success or failure will eventually be evaluated by the correspondence of his actions to this logic.

In the USSR however, the problem is qualitatively different. Given the social relations of production outlined in the early part of this chapter, the law of value does not and cannot operate internally and the state monopoly of foreign trade precludes its generalised penetration from the capitalist west. As a consequence concrete labour, complex or simple, is not automatically reduced to abstract labour. Therefore, no spontaneous commensurability arises between different labour times, intensities or skill levels or indeed in terms of the products produced, derived from the operation of purely economic forces. Labour is still the source of all value but the results of concrete labour are not expressed in a value form. This then raises two related questions: how is the commensurability necessary for economic calculation and control arrived at? Secondly, how is the pace and intensity of labour regulated in the absence of the operation of the law of value?

The answer to both questions is via the medium of work norms which represent an attempt on the part of the ruling group to replace the spontaneous, unconscious regulation of the law of value with a different form of control. The intention is that the work norms should reflect the conscious regulation of the labour process and provide a basis for the payment of wages. As Kheifets, points out, the desired result of norming is to make wages and rewards correspond directly to the individual worker's expended labour and the end results of the collective's work (242). However, the setting of work norms is fraught with difficulties as they reflect the antagonistic nature of the social relations of production.

As Manevich suggests, there is a contradiction involved between the individual and social interests (243). On one hand, as a member of a collective, the individual worker has an interest in improving output by working more intensively and conscientiously. Manevich's explanation of this would refer back to the assumption that the Soviet worker controls the productive process through his control of the state. As a consequence as the 'owner' of the means of production the worker would increase the intensity of his own labour. Of course, Manevich does not believe this and this can be seen from his explanation of the other pole of the contradiction.

On the other hand, for the individual this would lead to

more work for the same rewards. Consequently, there is a tension between the ruling group's desire to extend and tighten the norming of labour and the direct producer's reluctance to accept this control. This problem is compounded by the composition of the norming committees (244). For the norms to be in any way realistic they need to be based upon the expertise and knowledge of the direct producers and therefore, over half of the members of the norming committee are workers. This leads to the possibility that workers will underestimate capacity if it is not in their interest to work harder. This contradiction is inescapable in the present context of the USSR.

Nevertheless, the necessity to increase the diffusion of work norms and extend the scientific organisation of labour (NOT) is agreed by all commentators but there are a number of elements to this question.

Firstly, it is not just a question of introducing norms but the nature of the norms themselves. There is a need to replace experimental-statistical (opytno-statisticheskie) norms by technically validated (tekhnicheskie obosnovanie) norms (245). As Manevich explains, the existence of the former accounts for the vast overfulfilment of plan targets by piece-rate workers, by as much as 200% in some instances, as the norms do not accurately reflect their productive capacities (246). Sonin suggests that the replacement of statistical-experimental norms for piece-rate workers by technically validated norms could

TABLE 20.

Proportion of Workers whose Work is Normed.

	<u>1974</u>	<u>1976</u>	<u>1978</u>
All Industrial Workers	50%	70.3%	78.9%
Time Rate Workers	33.2%	51.3%	65.2%
ITR & Office Workers	13.9%	36.2%	57.7%

SOURCES: S. I. Shkurko, op. cit., p.44; E. Manevich, op. cit., p. 40.

TABLE 21.

Proportion of Technically Validated Norms.

	<u>1974</u>	<u>1978</u>
Piece Rate Workers	72.1%	81.1%
Time Rate Workers	33.2%	62.6%

SOURCE: L. Kheifets, op. cit., p.20.

TABLE 22.

	Proportion of Workers Working to Technically Validated Norms as a % of the Total Number for whom Norms have been set.		Proportion of Technically Validated Norms set from Branch & Inter-branch Norms as a %.	
	<u>1974</u>	<u>1976</u>	<u>1974</u>	<u>1976</u>
All Industrial Production Personnel.	71.9	79.2	75.5	82.9
Workers	71.3	78.4	74.4	81.3
ITR & Office Workers	87.8	87.6	98	98.2
of the Workers				
Piece Rate Workers	71.5	78.8	72	78.3
of whom basic production	—	80.3	—	77.7
Auxiliary Production	—	71.3	—	81.3
Time Rate Workers	67.9	77.4	83.8	88.1

SOURCE: — Shkurko, op. cit., p. 49.

lead to between a 3% and 5% increase in labour productivity overall (247). The diffusion of norms in general and technically validated norms in particular, throughout the 1970's are shown in Tables 20,21 and 22. (The apparent progress these figures seem to suggest will be qualified below).

Secondly, there is the widely recognised need to extend norms throughout all branches of the economy and to all types of employee. The labour of piece-rate workers in basic production is, theoretically at least, easier to norm than those paid on time-rates. Yet it is this latter group who need to be controlled more closely as they have the wider degree of discretion. Furthermore, it is essential to extend norming into areas like auxiliary work, service and repair sectors where the nature of the work makes the calculation of norms both more difficult and more necessary. Parfenov points out that 3.5 million workers and 2 million ITR have no norms whatsoever, particularly in the service sector and research (248). As previously noted, the high manning levels in these sectors has been explained by the problems of norming this type of labour. The potential results of introducing norms into these branches was indicated by Baranenkova, who suggests that in the period 1971-1975 the introduction of branch service norms into the auxiliary sector of the chemical industry resulted in 10,000 workers being released (249). There is also continuing pressure to norm the labour of ITR and employees whose work again can be difficult to quantify (250). There

are however, further problems that the establishment of norms, even technically validated norms, do not resolve. As Kheifets argues, the quantity of norms may not be a reflection of their quality (251). This has a number of elements.

Firstly, for work norms to fulfil the function of rationally controlling expenditures of live labour and providing a basis for remuneration and economic calculation they need to be internally consistent and proportional. As Gavrilov suggests work norms must approach as closely as possible, the socially necessary expenditure of live labour (252). This however, presents a series of difficulties not least of which is the sheer complexity of the task. In Soviet industry there are 217 million individual work norms and in machine building alone there are 190 million that have to be administratively set (253). This poses an immense task of co-ordination to maintain proportionality and consistency.

For example, within a single enterprise all machinists operating the same equipment should have the same work norms and remuneration. So too should all other machinists in the same industry operating the same equipment. By extension all other machinists in other industries involved with similar work should have similar work norms and rewards. Then the consistency between labour expenditure and rewards would be maintained. This raises the problem of what is similar and what criteria for evaluation should be

adopted and how proportionality between more and less complex labour and its remuneration should be dealt with. In order to maintain consistency this suggests that it is necessary to have a centralised system of norm setting and this explains the pressure for norm setting from branch and inter-branch manuals coordinated from the centre (254). Kulagin points out that this is difficult as different enterprises have differing levels of technology, support services and organisation and therefore, he suggests that a decentralised system of norm setting should be adopted to reflect these difficulties (255). But if this is adopted the whole regulatory role of work norms becomes questionable. What you are left with is a series of localised work norms that reflect localised patterns of production and past work practices and investment decisions. This leads to different levels of rewards for the same objective expenditures of labour time. These disparities will lead to worker discontent if norms are perceived to be unfair and, as has been suggested, to increasing labour turnover as workers move to enterprise where the same type of work yields the greater reward or the same reward at a lower intensity (256). It should however, be noted that inconsistent labour norms or some disproportionalities are better than no labour norms.

The second problem is that labour norms cannot be static, but must be continuously subject to scrutiny and upgrading. The reason for this is that the increasing dexterity and skill of the direct producers coupled with the the improved

co-ordination and organisation of the workforce will increase the potentiality for production. If work norms are to reflect the average socially necessary labour time they must change continually. As Kheifets suggests revision is often very slow or delayed completely (257). Manevich points out for example, that between 1969-1975 only 3.65% of output norms in the construction industry were revised or ruled to be obsolete (258). As Pogosyan argues, the slow rate of norm revision, between 1-3% per annum, explains why plan overfulfillment of 150-200% can exist in some sectors particularly when it is linked to non-technically validated norms (259). However, the potential for increasing production and freeing workers is clearly demonstrated in a later article by Manevich, where he suggests that improved norming in the years of the 10th Plan released 1.7 million piece-rate workers (260). In the same period improvements in norms contributed between 0.6 to 0.8% to labour productivity growth and in some branches contributed as much as 2% to 2.5% (261).

The problem becomes even more acute when technological change is involved and the necessary revision of norms is not achieved fully or quickly enough (262). Bunich however, has pointed out that rapid revision of norms may well be irrational from the individual enterprise's point of view. If some branches or enterprises revise norms more rapidly than others they may well find they lose employees as a consequence (263). Low norms and higher pay for the same kinds of jobs makes hiring workers easier.

The third problem is that even if technically validated norms are introduced they can be manipulated at the enterprise level by both managers and workers. Manevich has complained that managers operate a 'correction factor' which often nullifies the impact of the norms and it is rational for managers to manipulate norms in order to maintain their workforce at a suitable level. As Karpov pointed out, norms have more to do with the payment of wages than they have to do with the amount of work completed (264). Managers also manipulate norms in order to recompense workers for lay-offs which are management's fault, again in order to retain workers (265).

Furthermore, workers will work inside their real capacities even if the norms are set too low. Bunich complains that workers will try not to surpass their targets by more than 5% as any greater overfulfilment will lead to uprating (266). The tenuous link between work and rewards encourages and makes this behaviour rational. It leads to an underestimation of enterprise capacity, no improvement in labour productivity and increased demands for labour.

What is being suggested is that work norms are essential because of the nature of the Soviet system but its antagonistic nature contradicts and distorts their operation. No norm can ever be scientifically valid unless the direct producer controls all aspects of the labour process and production decisions. This would have to include not just the pace and intensity of work but also

fundamental decisions about what to produce, how to produce it and how to distribute the eventual use-values. Then the direct producer would have an unambiguous interest in directly validating every minute of his labour. Work norms would then be set by every producer/worker as a direct reflection of their self-interest. Norms set by any external body, (whether it is a multi-national corporation or the Central Norming Bureau of the USSR) can never be scientific if the worker has no direct control over them. The whole notion of scientific, in this context, is a mystification of the social relationship between the worker and his work and the social group attempting to extract a surplus.

The labour problems outlined in this section contribute to the decline in the rate of growth of labour productivity and the stagnation of economic growth experienced in the USSR. The problems reflect the antagonistic nature of the social relations of production and create the superficial appearance of an apparent labour shortage in the USSR. This is considered in the next section.

SECTION 7: THE SOVIET LABOUR SHORTAGE.

Soviet commentators and their western counterparts often refer to the Soviet labour shortage as a major contributory factor to the poor present performance of the economy and the slow down in economic growth (267). For Soviet writers, full employment is described as a basic law of the socialist economy and is contrasted to the high and growing rates of unemployment in the western capitalist economies as proof of the superiority of their 'socialist mode of production' (268). The existence of significant labour shortages is usually overlooked in the theoretical material and is certainly not assigned a significant place in the political economy of the USSR. The extent and nature of the labour shortage can be gauged from Table 23. This indicates that in the years for which figures have been found, the number of workers and employees called for in enterprise plans, consistently exceeded the actual numbers of workers. In fact during the 9th Plan over 2 million workplaces were created that never reached their full complement of staff and in the 10th Plan the figure was 1 million (269).

The problem of labour shortages can of course be exacerbated on a localised level by absurd planning decisions with regard to the location of new enterprises. For example, Chernichenko cites the case of a new diesel manufacturing enterprise, which was built at a town with a total population approximately half of the enterprise's

TABLE 23

DIFFERENCE BETWEEN ENTERPRISE PLANS FOR WORKERS AND THE ACTUAL NUMBERS.

1968	shortfall of	1 million (1)
1971	"	1.4 million (2)
1975	"	2.5 million (2)
1976	"	1.9 million (3)
1977	"	2 million+ (3)
1978	"	2 million+ (3)
1979-80	"	2 - 2.5 million (4)
1980	"	1.5 - 2 million (5) (6)
1. Novikov, Kommunist 1969, No. 13.		
2. Myasnikov, Trud, 17/6/79, p.2.		
3. Baranenkova, Voprosy Ekonomiki., 1980, No. 5 and Voprosy Ekonomiki 1979, No. 8, p.4.		
4. Manevich, Voprosy Ekonomiki, 1981, No. 9.		
5. L. A. Kostin, "Trudovye resursy v odinnadtsatoi pyatletke", 1981, p.43.		
6. Myasnikov, Literaturnaya Gazeta, 19/3/80, p.10.		

manpower needs (270). This created the need to transport workers in from the nearest larger town, (Yaroslav), which already had over 1000 vacancies, thus leading to unnecessary costs and further disproportions.

The apparent labour shortage also has a spatial element and is 60% greater in cities of over 1 million inhabitants, in comparison with cities of less than 1/2 million and this draws the population towards the larger cities (271). During the 9th and 10th Plans the growth rate of cities of over 1 million inhabitants was 2.5 times higher than the all-Union average. This obviously tends to place a larger burden on the social infrastructure of the cities, putting pressure on housing, health, education and transport facilities, as people migrate in the belief that living standards will be better.

However, the labour shortage that develops either geographically or on the basis of poor planning decisions is not the prime problem. What is identified in Table 23, is a persistent systemic generation of labour shortage. Kostin suggests, that there are now more than 2 million vacant jobs in the USSR and between 0.75 .and 0.8 million new workers are required each year for new enterprises (272). In the crucial machine building sector for example, 200,000 machine tools stand idle because of manpower shortages and in agriculture approximately 50% of trucks are unmanned (273).

Recently labour economists, writing from a more practical perspective, have begun to argue that the labour shortages are non-existent and that the problem is one of rational labour utilisation but nevertheless the notion of demographic problems underpinning economic problems still persists (274). The concepts of labour shortage and labour surplus have a dubious theoretical value unless carefully defined. They are not naturally occurring phenomena stemming from abstract, ahistorical laws of human reproduction. As Marx pointed out, during his comprehensive critique of Malthusian population theory,

"An abstract law of population exists for plants and animals only, and only in so far as man has not interfered with them" (275).

Consequently, the idea of a surplus population, which Malthus explains as a consequence of humanity reproducing itself on the basis of a geometric series and the reproduction of the means of subsistence on the basis of an arithmetic series, is for Marx,

"a historically determined relation, in no way determined by abstract numbers or by the absolute limit of the productivity of the necessaries of life, but by limits posited rather by specific conditions of production" (276).

The total population is that developed upon a specific production basis and surplus population, changes in various

historical conditions (277). The surplus population however,

"is purely relative: in no way related to the means of subsistence but rather to the mode of producing them" (278).

Marx's argument is that within the process of surplus extraction, which is central to the laws of accumulation under capitalism, there is a mechanism operating that produces the appearance of a relative surplus population.

"Since the necessary development of the productive forces as posited by capital consists in increasing the relation of surplus labour to necessary labour, or in decreasing the portion of necessary labour required for a given amount of surplus labour, then, if a definite amount of labour capacity is given, the relation of necessary labour needed by capital must necessarily, continuously decline, i.e. part of these capacities must become superfluous, since a portion of them suffices to perform the quantity of surplus labour for which the whole amount was previously required" (279).

The consequence is that the same external mechanism that forces the capitalist to accumulate, simultaneously through its operation, creates a relative surplus population. However, the relative surplus population is not simply the result of the accumulation process but it is also a

precondition for its functioning and a necessary condition for the existence of the capitalist mode of production (280). The industrial reserve army, or relative surplus population, acts to discipline those in work and weaken their organisation but it is also necessary to allow the continual expansion of the mode of production. It provides literally a reserve from which the capitalist may draw hands as they are required,

"The course characteristic of modern industry of periods of average activity, production at high pressure, crisis and stagnation, depends upon the constant formation, the greater or lesser absorption and the reformation of the industrial reserve army or surplus population" (281).

Therefore, what is being suggested is that the concept of surplus labour is contingent upon the mode of production. Under capitalism the relative surplus population is a necessary condition for and natural result of the accumulation process. It can neither be reformed nor wished away. The logic of the process is such that at particular points in time its size may fluctuate but the tendency for its reappearance is ever present in the surplus extraction process. Consequently, a historically determined link exists between the production base, the technological level, and the phase in the cycle of accumulation that under capitalist social relations of production produces the working population and its constituent working and non-working parts. The actual relative surplus population

at any time is a function of the interpenetration of these causes.

What are the implications of this analysis for the USSR? The first point to be made is that the appearance of labour shortages in the USSR and elsewhere in Eastern Europe, cannot be considered as natural phenomena but rather they are the result of the specific, historically determined social relations of production in those socio-economic systems. As has been continuously stressed throughout this chapter, the USSR is not subject to the same laws of motion as capitalism and consequently the accumulation process does not take the same form. The existence of a surplus extraction process, conditioned by external, unambiguous economic forces, acting upon formally free but contractually and economically tied individuals, is absent in the USSR. Consequently, the automatic pressures to economise necessary labour time and expand surplus labour time are absent. The contradictions inherent in capitalism that generates an industrial reserve army and creates, what Marx describes as, "the non-working worker", are absent in the USSR. However, a different set of contradictions exist and generate a tendency towards a relative labour shortage.

The central point is that the ruling group's inability to control the surplus extraction process leads to the conclusions outlined in Figure 1 above. Their inability to revolutionise the means and methods of production in the agricultural, industrial and service sectors of the economy

leads to, by international comparison, high labour intensity, low and declining labour productivity, overmanning and apparent labour shortages. For example, in machine building it has been estimated that Soviet enterprises employ between 30 and 50% more staff than comparable capitalist firms (282). In engineering a comparison with comparable West German plants shows that while 11% of the West German workforce is occupied in repair and transport work this figure rises to 38% in the USSR (283). In chemical plants in the USSR 3 to 4 times as many design staff are employed in comparison with similar German and Japanese plants etc (284). The planning process and success indicators have simply reinforced the problem as enterprise management have hoarded labour, underestimated plant capacity and inflated their demands for labour in order to be successful. Soviet estimates suggest that enterprise managers could free between 15% and 30% of their staff with little or no effect upon the volume of production (285).

Furthermore, the wasteful nature of production reinforces these tendencies. If goods are produced that yield no use-value and if there is no mechanism to either halt this inefficient production nor reallocate the resources involved, then it will be necessary to hire more workers elsewhere to produce more, hopefully useful, goods. As the problem is reproduced the labour shortage deepens. Therefore, the economic mechanism overall exhibits a tendency to create conditions of labour hoarding, creating

a relative shortage, rather than the tendency under capitalism to shed labour, causing a relative surplus.

Subjectively the ruling group has recognised the problem and intervened administratively to attempt to gain control over the process of surplus extraction but the intervention, for example through the uprating of plan targets, simply heightens the uncertainty felt by management and exacerbates the problems the intervention is attempting to resolve. For example, the chaotic state of the material supply system coupled with delays and changes in plan targets contributes to the arhythmic nature of production and this makes labour hoarding rational. The arhythmic nature of production also indicates the degree of overmanning. Khromov cites the example of a Moscow enterprise where in the first ten days 16.9% of the month's work is completed; in the second ten days 21.9% is completed; and in the last ten days 61.2% is completed (286). This is not atypical and as he points out, only where there are significant manpower reserves can between 2/3 and 3/4 of a month's work be completed in ten days (287). Furthermore, the bureaucratic nature of planning itself gives rise to large administrative burdens, which are often irrational, and this leads to a growing need for administrative workers, further exacerbating the labour shortage (288).

The apparent labour shortage also acts upon labour discipline and turnover, as suggested above, and further

weakens managerial control, reduces labour productivity and further negates the centre's intentions of increasing the surplus (289). The apparent labour shortage therefore, reproduces itself over time and is a feature of the inherently wasteful and unplanned process of surplus extraction. But it is more than this. It is both a result and the cause of the ruling group's lack of control over the process and is a testimony to the workforce's negative control.

This leads to a further question with regard to the nature of planning in the USSR. Soviet plans are intended to be rational, proportional and balanced. The plan for labour inputs is intended to reflect the size of the working population, its age and sex structure, the dynamic nature of changing education and skill levels and the law of growing labour productivity and it is intended to be in harmony with the plan for output (290). However, the appearance of labour shortages suggests that the plan is not harmoniously based upon the productive capacities of the economy but is in fact a set of externally determined targets. If the plan is a set of arbitrarily set targets then the notion of a labour shortage makes some sense but then the Soviet plan cannot be described in any meaningful sense as a plan. It is something reified and external to the direct producers and even to enterprise management. It is inadequate to suggest that the problem simply arises due to the complexity and size of the task as it is continually reproduced as part of the political economy of the system.

The idea that the first 'planned' economy depends for its economic success or failure on the labour of old-age pensioners and the ability of Soviet women to produce more children shows the degree to which the concept of planning has to be stretched to accommodate the current Soviet economic mechanism. It would be more accurate to describe the economy as bureaucratically administered, by a ruling group whose economic instability allows a hitherto unheard of degree of negative control to the direct producers, which in turn generates the apparent labour shortages.

It also calls into question the idea that the USSR represents a higher mode of production, in however a degenerated or distorted form. Marx after all identified capitalism's progressive function as its ability to revolutionise the material basis of production and consequently raise labour productivity. Therefore, a social system which is not capitalist but is technologically backward in comparison, that imports technology from capitalism and that is only able to raise labour productivity at a declining rate and is still seeking growth in the absolute surplus can hardly be described as a higher mode of production however sophisticated the caveats.

SECTION 8: A BRIEF DIGRESSION ON THE THEORETICAL ASPECTS OF LABOUR SURPLUS AND SHORTAGE.

The question of labour shortages or surpluses can also be briefly considered on a more general and abstract level. If we consider an isolated individual in some habitable space (perhaps the desert island so popular in classical political economy) we can abstract from the specificities of both capitalism and the USSR. The individual we will assume, is not a Robinson Crusoe figure who has come from an advanced mode of production to a more primitive world, but an individual with no prior knowledge of economic or productive potentialities. For our isolated individual production occurs on the basis of his own expended labour time, acting upon the 'free gifts of nature' available to him. The individual will produce use-values to satisfy his own wants, which will be generated initially by physiological needs. His capacity to satisfy these needs will regulate his labour-time in correspondence with the level of technique and the available resources. In these circumstances both techniques and needs will be altered through experience. The individual's work activity will involve a learning process that will modify both needs and the means to satisfy them. However, in these circumstances there is no possibility of either a labour shortage or labour surplus developing because the expenditure of human labour time will be directly regulated by the individual's needs. Surplus labour is a concept with no relevance to

this situation because if the potential labour time expended is greater than that necessary to satisfy his needs then it can simply be curtailed and turned into leisure time. The intensity of the individual's labour is therefore, determined by his needs which develop as his abilities to produce develop. Equally there can be no possibility of a labour shortage because the individual cannot conceptualise production on the basis of anything but his own capacities to labour. Certainly these will change through time but no conception of a labour shortage can develop.

It is in this respect that the isolated individual above differs from Robinson Crusoe. He was able to conceptualise production over and above his own labour capacities and he could envisage a form of labour organisation that could provide it. Therefore, objectively he did experience a labour shortage as his perception of his needs exceeded his ability to fulfil them. Those needs however, were generated in the context of a different social system and were never dependent upon his own expenditures of labour-time alone. They were based upon a mode of production that relied upon a form of labour organisation that was exploitative and produced a surplus for the class of owners. The eventual resolution of this problem for Robinson Crusoe was the relationship with Friday as he extracted a surplus from Friday's labour. Interestingly, this relationship was initially based upon force but eventually became more subtle as Friday was incorporated,

to some extent at least, into Crusoe's consumption patterns.

To generalise further, it is only when exploitative social relations of production exist that the possibility of labour shortages can begin to develop. Once the concept of utilising the surplus labour of the direct producers for the benefit of a class of surplus extractors develops then the need for an increasing pool of direct producers becomes apparent. This is true both in conditions of slavery and feudalism. However, implicit in these relationships is the possibility of generating a relative surplus population.

It is the divorce of production, based upon the needs of the direct producers, from individual control over labour-time that creates this possibility. Objectively each individual has the capacity to be both producer and consumer, adding to both the productive potential of the society and the claims made upon that production. Consequently, there cannot be a surplus population unless the social relations of production make the production of means of subsistence subordinate to some other law than necessity. This is indeed the case under the capitalist mode of production where profitable accumulation is that law, achieved through the surplus extraction process.

Equally, a labour shortage can only come into existence when the needs of the direct producers and their control over their own labour time is disrupted. In the USSR the

exploitative relations are not subject to the law of value but equally are not regulated by need. Consequently, the indirect control of the direct producers manifests itself as apparent labour shortages. Only when harmony between needs and control over labour-time is achieved would it be possible to talk of full employment, individually regulated and controlled by the needs of the direct producer.

.....

It has been argued therefore, that the political economy of the USSR is such that the ruling group has reached an impasse. To reproduce itself it requires a guaranteed and usable surplus yet the contradictory social relations of production upon which its position rests, produces circumstances that make this difficult to achieve. The indirect negative control exerted by the workforce undermines this aim.

Nothing has been said thus far, concerning the occurrence of direct worker activity in the form of strikes, co-ordinated go-slows and demonstrations etc. The reason for this is that by its very nature, evidence of this type of activity is fragmentary and often disputed (291). More importantly however, the existence or non-existence of these types of activity is not crucial to the general thesis being presented. They represent powerful and concentrated evidence of the underlying antagonisms within

the social system, (as they do under the capitalist mode of production) but they are not the only form of class struggle (this is also the case under capitalism). When strikes for example, do occur they are usually localised and harshly repressed (292). This in itself is a reflection of the nature of the system because in the absence of independent Trade Unions or political parties, worker's resistance will either be individualised or spontaneously explosive. It is a reflection of the antagonistic social relations of production in their specific Soviet form.

The preceding analysis therefore, suggests a central problem for the ruling group. In the absence of the law of value there exists no unambiguous regulator of economic activity that can simultaneously discipline both the workforce and enterprise management and at the same time maintain the ruling group's privileged position. Regulation that does exist comes via a 'planning' process, that is inherently conditioned by the self-interest of enterprise management and the negative pressure of the workforce. This necessitates continual bureaucratic intervention from the centre, which in turn reinforces the problems that generate the need for intervention in the first place. What appeared necessary to the ruling group was a shift away from the extra-economic, political control that existed to economic forms of control that would neither destabilise its position by provoking popular discontent but which would simultaneously increase its control over a usable surplus

and allow the incorporation of sections of the society and thus stabilise its political hegemony. The attempts by the ruling group to reform the economic system, from the mid-sixties onwards are part of this dynamic and represents their search for stability.

It is against this background that the experimental initiatives must be viewed. The Shchekino experiment was essentially an attempt to resolve the problems identified in this chapter, specifically labour shortages, declining productivity, labour indiscipline etc. The aim was to deal with these problems of labour organisation at the level of the enterprise and simultaneously incorporate sections of the workforce by the stimulation of worker's self-interest. It is to the experiment itself that the next chapter turns.

FOOTNOTES TO CHAPTER 2.

1. "Moshe Lewin has written that, 'the vocation of Marxism is the analysis of class realities hiding behind various facades'. One of the ironies of Soviet intellectual life is that Soviet scholars cannot apply this vocation to the analysis of their own society". Cited by M.Yanowitch, "Social and Economic Inequality in the Soviet Union", London, 1977.

2. J.V.Stalin, "The Economic Problems of Socialism in the USSR", Peking, 1972, p.75.

3. H.H.Ticktin, "Reply to Molyneux", Critique, No.17, 1985.

4. "Political Economy: Socialism", G.A.Kozlov, (Ed), Moscow, 1977, p.33. Also see A.Kudryavtsev, "Socialist Organisation of Labour", Moscow, 1978, pp.53-54.

5. Stalin, op.cit., p.15.

6. Kozlov, op.cit., p.76; L.Blyakhman and O.Shkaratan, "Man at Work", Moscow, 1973, pp.224-257.

7. Kozlov, op.cit., p.75. E.Manevich, 'Voprosy Truda v SSSR', Moscow, 1980, p.11.

8. E.Manevich, "Lenin on Work under Socialism and Communism", Moscow, 1970, p.16.

9. Stalin, op.cit., p.17.

10. Kozlov, op.cit., p.64.

11. A.Zdravomyslov, Pravda, 23/9/83, clearly enumerates the tasks of contemporary sociological work and these include; assisting the formation of a socialist attitude to work, improving management processes, aiding economic science to improve efficiency and productivity, and to assist in the scientific formation of prices. This functionalist approach to sociological questions existed throughout the seventies. See for example, "Sotsiologicheskie issledovaniya - na sluzhbu stroitel'stvu kommunizma", Sotsiologicheskie Issledovaniya, 1976, No.2, p.8.

12. For an outline of the development of Soviet sociology see the introduction to M.Mathews, "Soviet Sociology 1964-1975", New York, 1978.

13. L.Blyakhman and O.Shkaratan op.cit., p.200, "the social structure of the present working class comprises an interlocking and interacting intra-class formation the dominant ones being the socio-vocational strata, that have arisen on the basis of the social division of labour".

14. O.I.Shkaratan, "Problemy sotsial'noi struktury

rabochevo klassa SSSR", Moscow, 1970, pp.377-378.

15. V.G.Podmarkov, A.K.Zaitsev, V.V.Novikov, "Problemy zavodskoi sotsiologii", Sotsiologicheskie Issledovaniya, No.3, 1977, pp.163-164, where the authors set out the functionalist tasks of Soviet industrial sociology.

16. The implication from Kozlov is an extension of the stagist schema to a two stage transition of 'socialism' and 'mature socialism' preceding 'full communism'. op.cit., p.53.

17. Manevich, (1970), op.cit.,p.37.

18. Ibid., p.52.

19. Ibid., p.5.

20. Kozlov op.cit., p.394.

21. Ibid., p.397.

22. See I.Oblomskaya, A.Starakhov and L.Umanets, "Sotsial'no-ekonomicheskaya odorodnost' truda", Voprosy Ekonomiki, 1983, No.6, pp.28-34.

23. Blyakhman and Shkaratan, op.cit., pp.149; 167-168.

24. In the USSR approximately 20% of the economically active population are involved in agriculture in comparison with approximately 3% in the USA. Manevich suggests that the Soviet agricultural population is almost eight times as large as the American.

25. Sh.Korupillo, Izvestia, 11/7/83, p.6.

26. Blyakhman and Shkaratan, op.cit., pp. 245-253.

27. Manevich, op.cit., p.21.

28. Western non-Marxist work on the Soviet working class has fallen into three distinct categories. Firstly, the American cold-war approach which seeks to highlight the plight of Soviet workers, without applying similar critical faculties to US capitalism. See for example, R.Conquest, "Industrial Workers in the USSR", London 1967. Sociological work,functionalist in orientation. See for example, D.Lane "Politics and Society in the USSR", London, 1978, pp.382-423, "The End of Inequality? Stratification under State Socialism", London, 1971. Collections of papers of uneven qualities and with a variety of theoretical perspectives. See for example, "The Soviet Worker", L.Shapiro and J.Godson (Eds), London, 1981, which contains both academic papers and journalism.

29. D.Lane and F.O'Dell,"The Soviet Industrial Worker", Oxford, 1978, p.3.

30. Ibid., p.4.

31. Ibid., p.132.

32. Ibid., p.6.

33. Ibid., p.18.

34. Ibid., p.49.

35. Ibid., p.46.

36. Ibid., p.20.

37. Ibid., p.15.

38. It is impossible to consider fully all the various strands in this debate which would take a separate thesis. The spectrum of opinion can be summarised as follows;

a. The pro-Moscow Communist Parties who view the USSR as Socialist and moving towards 'full communism'. See for example, D.Purdy, "The Soviet Union: State Capitalist or Socialist", CP Pamphlet, 1976.

b. The Eurocommunist perspective, that the USSR is essentially socialist but with specific problems in the political superstructure connected with democratic rights. See, Fernando Claudin, "Eurocommunism and Socialism", London, 1978.

c. The 'Orthodox' Trotskyist position that the USSR is a 'degenerated workers state' where the fundamental problem lies in the dislocation between a 'socialist mode of production' and a 'bourgeois mode of distribution', necessitating a political revolution to restore the USSR to a socialist path. See E.Mandel, "Marxist Economic Theory", London 1968, pp.560-565; "Ten Theses on the Social and Economic Laws Governing the Society Transitional Between Capitalism and Socialism", Critique No.3, 1974, pp.5-22; "Once Again on the Trotskyist Definition of the Social Nature of the Soviet Union", Critique No.12, 1979, pp.117-127.

d. The state capitalist school who argue that the USSR represents a new higher and more degenerate form of capitalism. See T.Cliff, "State Capitalism in Russia", London, 1974; C.Harman, "Bureaucracy and Revolution in Eastern Europe", London, 1974; Haynes and Binns, op.cit. Articles from both the 'State Capitalist' and 'Degenerated Worker's State' viewpoints are collected in "Readings on State Capitalism", IMG Pamphlet, London 1973.

e. The Capitalist Restorationist School, which argues that capitalism was restored with the death of Stalin. For an extreme version see Wei Chi, "The Soviet Union Under the New Tsars", Peking, 1978. For a slightly more sophisticated view see C.Bettelheim, "The Transition to the Socialist

Economy", London, 1975 and the exchanges reprinted from Monthly Review in C.Bettelheim and P.Sweezy, "On the Transition to Socialism", New York, 1971.

f. A variety of theorists, both western academics and East European dissidents, who point towards either a 'new class', based on either the party, the intelligentsia, the bureaucracy, the technocracy or any combination of them, or seek to explain the USSR by some recourse to previous social systems or modes of production. For example those who seek to characterise the USSR as some form of 'Asiatic mode of production' or 'Oriental Despotism'. See for example, G.Konrad and I.Szelenyi, "Intellectuals on the Road to Class Power", New York, 1979; M.Djilas, "The New Class", London, 1957; M.Machover and J.Fantham, "The Century of the Unexpected", London, 1979; R.Bahro, "The Alternative in Eastern Europe", London, 1978; M.Rakovski, "Towards an East European Marxism", London, 1978.

39. "Planning a Socialist Economy" Vol.1, L.Ya.Berri, (Ed), Moscow, 1977, p.11.

40. Lane and O'Dell, op.cit., p.138.

41. This is precisely the problem with Nove's desire to use the 'nomenklatura' as the basis of a definition of the Soviet ruling group and it derives from this mistaken 'sociological' view of class. See for example, A.Nove, "Is there a Ruling Class in the USSR?", Soviet Studies, Vol.27, No.4, pp.615-638 and A.Nove, "The Class Nature of the USSR Re-visited", Soviet Studies, Vol.35, 1983, No.3, pp.298-312, and "The Economics of Feasible Socialism", London, 1983, pp.81-82.

42. The general level of discontent has been noted by a variety of writers. For journalistic accounts see H.Smith, "The Russians", London 1976, and R.Kaiser, "Russia: The Power and the People", London 1977. Worker dissatisfaction has been discussed in V.Haynes and O.Semyonova, "Workers Against the Gulag", London, 1979, pp.109-110; 112-115; M.Holubenko, "The Soviet Working Class Opposition", Critique, No.4, 1975. Descriptions of discontent can also be found in the work of writers associated with Radio Liberty and Radio Free Europe. See for example, M.Ralis, "Workers Social Perceptions", in L.Shapiro and J.Godsen (Eds), op.cit., pp.231-251 and E.Teague, "Worker Discontent in the Soviet Union", Workers Under Communism, 1982, No.2, pp.22-25.

43. See A.Nove, "Agriculture", in "The Soviet Union Since the Fall of Krushchev", A.Brown and M.Kaser, (Eds), London, 1978, pp.10-11. Nove points out that the USSR has the "most gigantic agricultural subsidy known in human history".

44. See O.MacDonald, "Worker's Opposition in Poland", Critique, No.7, 1977, pp.93-99 and "Solidarity and the Soviet Bloc: A Worker's Under Communism Symposium", Worker's Under Communism, 1982, No.2, pp.6-14.

45. See V.Belotserkovsky, "Worker's Struggles in the USSR in the Early Sixties", Critique, No.10/11, 1979, pp.37-51, A.Boiter, "When the Kettle Boils Over", Problems of Communism, 1964, No.1, pp.33-43.

46. From Stalin onwards Soviet leaders have bemoaned the lack of consumer goods and the potential problems this engenders. See for example, L.Brezhnev, Pravda, 4/7/78, p.1 on the difficulties of agricultural supplies; Yu.Andropov, Pravda, 23/11/82, pp.1-2 on the problems of supplying adequate good quality consumer goods. The proportion of national income utilised for consumption is growing very slowly from 72.1% in 1966-70 to 74.5% in 1981-1983. See Vestnik Statistiki, 1984, No.11, p.36.

47. See for example, M.Marese and J.Vanous, "Soviet Subsidisation of Trade with E.Europe: A Soviet Perspective", Berkeley, 1983, who argue that the Soviet Union subsidises E.Europe in return for military and political loyalty.

48. See J.C.Brada, "Soviet Subsidisation of E.Europe: The Primacy of Economics over Politics?", Journal of Comparative Economics, Vol.9, No.1, March 1985.

49. See N.Smelyakov, Trud, 24/7/81, p.3. Also A.Tselikov, Trud, 3/2/81, p.2, complains that Soviet vehicles are inefficient and fail to compete with similar western models due to poor quality inputs which make Soviet vehicles 15-25% heavier than their western equivalents.

50. See for example, A.Nove, "The Economics of Feasible Socialism", op.cit., p.82.

51. The contract can either be indefinite or for a specified period no more than 3 years. See V.Glazyrin, V.Nikitinsky, N.Maksimova, A.Yarko, "Soviet Employees Rights in Law", Moscow, 1978, p.13. See also "The Labour Code of the RSFSR", Articles 15,16,17.

52. Once the USSR abolished unemployment the necessity for unemployment benefit also disappeared. As a consequence it is both difficult and illegal to live outside the world of work, not least because of the distribution of some consumption goods and services through the factory. Since the mid-1960's Soviet writers have pressed for the reintroduction of the 'dole'. See for example, E.Manevich, "Problemy vosproizvodstva rabochei sily i puti ulushcheniya ispol'zovaniya trudovukh resursov v SSSR", Voprosy Ekonomiki, 1969, No.10, p.50.

53. Complaints regularly occur in the Soviet press regarding the mismatch of skills. See for example M.Khromakov, Komsomol'skaya Pravda, 18/4/80, p.2. Even though the USSR produces large numbers of engineers per annum a considerable proportion work in jobs, for which they are over-qualified. See E.Manevich, (1980), op.cit.,

54. "The Constitution (Fundamental Law) of the RSFSR", Article 38. In W.Simon (Ed), "The Soviet Codes of Law", 1980, p.16.

55. "The Labour Code of the RSFSR", op.cit, Articles 29,33,34. It is interesting to note that the major criteria for deciding which workers should be retained during staff cuts, are individual productivity and work quality. After these two conditions comes a series of personal and social conditions, size of family, length of service etc.

56. See N.Lampert, "Job Security and the Law in the USSR", Birmingham Conference Paper, 1984, who points out that the formalities of the labour code can be avoided.

57. V.Glazyrin et al, op.cit., pp.169-175.

58. For examples of this type of victimisation see the case of Klebanov and his fellow Free Trade Unionists in "Story of a Worker's Group", Labour Focus on Eastern Europe, Vol.2, No.1, p.2. Also V.Haynes and O.Semyonova, op.cit., pp.36-72. For other representative examples see, Feldbrugge and Simons (Ed), "Perspectives on Soviet Law for the Eighties", 1982, pp.62-63.

59. See for example, Yu.Shishkov, "Uchenie K.Marksa o bezrabortitse i sovremennost'", Voprosy - Ekonomiki, 1983, No.5, pp.41-43.

60. P.G.Bunich, "Ekonomicheskie stimulirovanie vysokikh konechykh rezultatov", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1984, No.2, p.13.

61. H.H.Ticktin, "Towards a Political Economy of the USSR", Critique, No.1, 1973; pp.36-37.

62. Ibid., p.37.

63. Yu.Peshekhonov, Ekonomicheskaya Gazeta, 1983, No.46, p.15.

64. Ibid., p.15.

65. Ticktin, op.cit., p.41.

66. H.H.Ticktin, "The Class Structure of the USSR and the Elite", Critique, No.9, 1978, pp.44-48.

67. G.A.E.Smith, "The Political Economy of the Reform Movement", Critique, No.4, 1975, pp.27-32.

68. See M.Ellman, "Socialist Planning", Cambridge, 1979, pp.17-18.

69. For a critical view of this practice see I.Birman, "From the Achieved Level", Soviet Studies, Vol.30, No.2,

1978, pp.153-172.

70. H.H.Ticktin, "The Contradictions of Soviet Society and Professor Bettelheim", Critique, No.6, 1976, pp.41-42.

71. For example, R.Blackburn, "The New Capitalism", in "Ideology in Social Science", R.Blackburn (Ed), London, 1972, pp.164-186.

72. See R.Marris, "The Theory of Managerial Capitalism", London, 1964.

73. V.Andrle, "Managerial Power in the Soviet Union", London, 1976, pp.76-78.

74. The complexity of planning is shown by Gossnab's current task of constructing 18,000 material balances and allocating 1 million specific product lines. See N.Fedorenko, "Planirovanie i upravlenie: kakimi im byt'?", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1984, No.12, p.7.

75. J.Berliner, "Factory and Manager in the USSR", Cambridge, 1968, pp.53-54.

76. Ibid., pp.75-113.

77. All of these elements will be explored in more detail in the following sections of this chapter.

78. Ultimately all capitalist firms are competitors. Monopolisation of the market for a product within national boundaries, does not preclude competition from overseas nor from other sectors.

79. The nationalised sector in the UK is a good illustration of the process. A combination of social-democratic, government control plus strong trade unions produced an internal control over the labour process that allowed low intensity of work, high manning levels etc. This reflected on economic performance, particularly in those sectors that competed internationally (vehicles and steel). Once the current crisis began to deepen and the social democratic government was replaced, the logic of the law of value contradicted the internal organisation of production. The result has been massive redundancies in state vehicle production, steel etc.

80. See Ticktin, Critique, No.1, op.cit., pp.24-32.

81. See C.Rakovsky, "The Five Year Plan in Crisis", Critique No.13, 1981, pp.16-21.

82. The Soviet figures on output, growth and labour productivity need to be interpreted with some care. See for example the articles by M.Ellman, P.Wiles and A.Nove in "Crisis in the East European Economy", J.Drewnowski (Ed),

London, 1982. Ellman for example, suggests that Soviet growth has actually come to an end. I intend to make no contribution to this debate on the interpretation of Soviet statistics but will simply use Soviet statistics in this area to demonstrate that growth rates are declining even in Soviet terms.

83. See G.A.E.Smith, "The Industrial Problems of Soviet Agriculture", Critique, No.14, 1981, pp.41-43.

84. Ibid., p.46.

85. I.Zagaitov and P.Polovinkin, "Ustoichivost' sel'skohozyaistvennogo proizvodstva", Voprosy Ekonomiki, 1984, No.1, p.75, notes that fluctuations in National Income are often caused by agricultural problems.

86. On the importance of the private plot see A.Lane, "USSR: Private Agriculture on Centre Stage", in "Soviet Economy in the 1980's: Problems and Prospects", Joint Economic Committee of Congress, Washington, 1983, pp.23-41.

87. E.Manevich, "Ratsional'noe ispol'zovanie rabochei sily", Voprosy Ekonomiki, 1981, No.9, p.60.

88. Ibid., p.60.

89. Ibid., p.60.

90. Ibid., p.60.

91. This is particularly true if no mechanism exists to penalise this course of action which in the circumstances is completely rational.

92. See Ya.Orlov, "Spros naseleniia i zadachi proizvodstva i trgovli", Voprosy Ekonomiki, 1983, No.9, pp.101,103,107 for a series of examples.

93. Soviet built consumer goods, particularly cars, destined for western markets have to be of higher standard than their domestic counterparts and cars are even rebuilt or fitted with more appropriate parts (particularly tyres) or accessories at special depots outside the USSR.

94. V.D.Belkin, "Tovarno-denezhnaya sbalansirovannost' ee rol' i problemy obespecheniya", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1982, No.2, p.78. For a graphical account of these relationships see, T.M.Boiko, "Denezhnye sberezheniya naseleniya", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1982, No.2, pp.131-138.

95. Sh.B.Sverdlike, "Rost sberezhenii naseleniya: prichiny i sledstviya", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1982, No.6, p.120.

96. Ibid., pp.121-122.

97. Ibid., p.122.

98. V.D.Belkin, op.cit., p.78, suggests that between R3 and R4 billion worth of goods are left in the trade network each year. See also P.Kondrashov, Pravda, 16/3/83, p.3.

99. E.Aleksandrova and E.Fedorovskaia, "Mekhanizm formirovaniia i vozvoyheniia potrebnostei", Voprosy Ekonomiki, 1984, No.1, points out that the share of capital investment in Department 2 fell from 15.1% in the 8th Plan, to 13.8% in the 9th, to 12.1% in the 10th and was 12% in the first years of the 11th.

100. For a western account of the problems facing the USSR see B.Rumer, "Soviet Investment Policy: Unresolved Problems", Problems of Communism, 1982, No.5, pp.53-68.

101. See Sotsialisticheskaya Industriya, 31/10/79, p.4.

102. V.Shimansky, Pravda, 17/8/83, p.3.

103. G.Kulagin, "O putiakh intensifikatsii (iz bloknota ekonomista), Planovoe Khozyaistvo, 1983, No.4, p.102. See also S.A.Kheiman, "Proizvodstvennyi apparat mashinostroeniya i stankostroenie", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1982, No.1, p.34 who points out that the comparable replacement rate in the USA is 5.5-6% and in the FRG 8-9%.

104. L.A.Kostin, "Reservy ispol'zovaniya trudovykh resursov", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1984, No.1, pp.26-27. See also M.Chentemirov, "Puti povysheniya ekonomicheskoy effektivnosti kapital'nykh vlozhenii", Voprosy Ekonomiki, 1980, No.6, p.35.

105. G.A.Kulagin, op.cit., p.105.

106. L.Smyshlyaeva, "Sovershenstvovanie vosproizvodstvennoy struktury kapital'nykh vlozhenii", Voprosy Ekonomiki, 1983, No.9, p.26.

107. M.Zotov, "Intensifikatsiya investitsionnogo protsessa", Voprosy Ekonomiki, 1984, No.2, p.19.

108. L.Abalkin, "Perevod ekonomiki na intensivnyi put' razvitiya", Voprosy Ekonomiki, 1982, No.2, pp.6-7.

109. G.A.Kulagin, op.cit., p.102.

110. See A.V.Bachurin, "Kompleksno sovershenstvovat' planirovanie upravlenie i metody khozyaistvovaniya", Planovoe Khozyaistvo, 1981, No.1, p.17. As S.Smirnov points out, it is not just a question of producing robots but also auxiliary equipment that can account for between 40-100% of the basic cost, Ekonomicheskaya Gazeta, No.14, April 1984, p.14.

111. See Sotsialisticheskaya Industriya, 19/12/73, p.4; V.Selyunin, Sotsialisticheskaya Industriya, 7/6/79, p.2; V.Kuzmishchev and M.Odinets, Pravda, 17/6/83, p.2.
112. The case of the soft drinks enterprises that failed to produce Pepsi up to the rated capacity is a good example of the problems. This has been due to shortages of spares for the plant, incorrect size and quality of the glass bottles (with consequent breakdowns and delays) and shortages of bottles. See M.Poprydkin, Pravda Ukrainy, 9/7/82, p.2.
113. E.Manevich, "Problemy vosproizvodstva rabochei sily i puti ulushcheniya ispol'zovaniya trudovykh resursov v SSSR", Voprosy Ekonomiki, 1969, No.10, p.34.
114. P.Shimenkov, "Ratsional'no i ekonomno ispol'zovat trudovye resursy", Sotsialisticheskii Trud, 1981, No.4, pp.110-111. On the need to reduce manual labour see A.I.Baibakov, "Povyshchenie nauchnogo urovnia upravleniya trudom", Moscow, 1980, p.109.
115. E.S.Rusanov, "Ratsional'noe ispol'zovanie trudovykh resursov i rost proizvoditelnosti truda", Moscow, 1983, pp.82-83.
116. L.A.Kostin, op.cit., p.25.
117. L.Danilov, "Sokrashchenie ruchnogo truda - vazhnyi faktor ratsional'nogo ispol'zovaniya trudovykh resursov", Kommunist 1977, No.9, p.42.
118. Ibid., p.43.
119. M.Ya.Sonin, "Effektivno ispol'zovat trudovye resursy", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1977, No.4, p. See also B.Tsvetkov, "Nauchno-tekhnicheskii progress i problemy vysvobozhdeniya rabochei sily v promyshlennosti", Sotsialisticheskii Trud, 1980 No.3, p.73 who points out that over half the heavy tasks in the metallurgical industry are still performed manually.
120. Ibid., p.73.
121. V.Shimansky, op.cit., p.3.
122. A.D.Smirnova and K.Sabo, op.cit., p.252.
123. N.Aitov, Sovetskaya Rossiya, 22/7/79, p.2.
124. Ibid., p.2.
125. "Trudovye Resursy v SSSR", L.A.Kostin (Ed), Moscow, 1979, p.12.
126. L.A.Kostin, Ekonomika i organizatsiya promyshlennogo proizvodstva, 1984, No.1, op.cit., p.33. See also T.N.Medvedev, "Ekonomicheskie problemy rosta naseleniya i

ispol'zovaniya trudovykh resursov v SSSR", Moscow, 1978, p.136.

127. L.A.Kostin, op.cit., p.27.

128. E.Manevich, "K resheniiu problemy vosproizvodstva i ispol'zovaniia rabochei sily", Sotsialisticheskii Trud, 1977, No.5, p.123.

129. M.Zotov, op.cit., p.19.

130. Aitov, op.cit., p.2.

131. V.Vasil'eva, Sotsialisticheskaya Industriya, 27/9/80, p.2.

132. V.Lebedev, Sotsialisticheskaya Industriya, 5/7/81, p.2.

133. M.Vasin, Pravda, 26/4/81, p.2.

134. M.Vasin, Pravda, 27/4/81, p.2 and V.Gerasinov and N.Petrov, Pravda, 27/11/83, p.2.

135. This is reported by C.Groys, "Robots in Soviet Industry", RL 158/84.

136. M.Vasin, Pravda, 20/4/83, p.2.

137. V.Parasyuk, Sotsialisticheskaya Industriya, 26/1/83, p.1.

138. A.Aganbegyan, Pravda, 24/2/82, p.2.

139. Ibid., p.2. For a discussion of the problems of the machine tool industry with regard to its backwardness, lack of specialisation and disincentives to investment see, "Metalloobrabatyvaushchee oborudovanie: Tekhnicheskii uroven' i konkurentosposobnost'", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1982, No.1, pp.23-145. As V.Pokrovskii, Ekonomicheskaya Gazeta, 1984, No.14, points out, 30% of machine building output is second quality (ie sub-standard or obsolete).

140. L.A.Kostin (Ed), op.cit., p.129; V.Parfenov, Pravda, 28/5/79, p.5 and Yu.Tushinov, Pravda, 13/5/80, p.3.

141. T.Baranenkova, "Rezervy ekonomii rabochei sily", Voprosy Ekonomiki, 1980, No.5, p.53.

142. L.A.Kostin (Ed), op.cit., pp.15-16. Furthermore whilst R1 million spent on new technology in 1970, freed 80 industrial workers, in 1980 it would only free 57 workers because of the rising costs of new technology, Ibid., p.26.

143. See Sonin, op.cit., p.13.

144. E. Manevich, "Voprosy Truda v SSSR", Moscow, 1980, p.79.
145. T.Dzokaeva, Literaturnaya Gazeta, 2/4/80, p.14.
146. P.Khromov, "Proizvoditel'nost truda i ekonomicheskii rost", Voprosy Ekonomiki, 1981, No.10, p.20.
147. B.Balashov, Sotsialisticheskaya Industriya, 9/1/83, p.2.
148. See "Narodnoe Khozyaistvo SSSR v 1982g", Moscow, 1983, p.36.
149. L.A.Kostin, (Ed)., op.cit., p.12. For later figures see V.Perevedentsev, "Vosproivodstva naseleniya i semya", Sotsiologicheskie Issledovaniya, 1982, No.2, p.81, who shows the expected growth in both absolute and percentage terms as follows; 1971-75 8.5m (7%), 1976-80 13.8m (10.6%), 1981-85 7.7m (5.4%), 1986-90 -1m (-0.6%), 1991-95 4.2m (2.8%), 1996-2000 1.5m (1.0%).
150. See M.Novitskii, Trud 29/1/82, p.2. See also V.E.Aper'yan, op.cit., pp.82-83.
151. See Vestnik Statistiki, 1979, No.2, p.79 and A.Dmitryev and P.Lopata, Pravda, 27/9/83, p.3.
152. E.Manevich, Voprosy Ekonomiki, 1981, No.9, op.cit., p.56.
153. See A.D.Smirnova and K.Sabo, op.cit., p.248; V.Perevedentsev, "Migratsiya naseleniya i razvitie sel'skokhozyaistvennogo proizvodstva", Sotsiologicheskie Issledovaniya, 1983, No.1, pp.55-60; N.Rogovskii, "Effektivnost' truda v odinnadtsatoi pyatletke", Voprosy Ekonomiki, 1982, pp.7-8. More recently, O.Latifi and V.Usanov, Pravda 18/6/84, p.2, repeat the necessity to encourage Central Asians to migrate and participate in socialised production.
154. See for example, Z.Yanhova, Literaturnaya Gazeta, 5/3/80, p.11.
155. N.Rad'ko, Literaturnaya Gazeta, 16/5/79, p.13, comments upon the difficulties involved with this strategy.
156. See the decree TsK KPSS and Soveta Ministrov SSSR, "O meropriyatiyakh po material'nomu stimulirovaniyu raboty pensionerov v narodnom khozyaistve", 1/1/80.
157. S.Slavina and V.Kogan, "Pensioner prishel na proizvodstvo kakie usloviya nado emu sozdat'", Sotsialisticheskii Trud, 1978, No.10, p.136.
158. Novitskii, op.cit., p.4.
159. M.Prokofiev, Pravda 7/8/82, p.3, points out that

there were 2,500 interschool production training complexes but stresses the need to strengthen this link. See also the debate between M.Rutkevich, Sovetskaya Rossiya, 21/8/83, p.3, and V.Dyachenko, Sovetskaya Rossiya, 27/8/83, p.2.

160. A.D.Smirnova and K.Sabo, op.cit., p.248.

161. A.Mitrofanov, Sotsialisticheskaya Industriya, 25/3/79, p.2, points out that the reluctance of youth to enter work is used extensively by parents as a threat against poor examination performance. See also G.Kulagin, Literaturnaya Gazeta, 21/2/79, p.10.

162. For example the subbotnik dedicated to the 60th anniversary of the October Revolution and the 107th anniversary of Lenin's birth, involved 144 million workers who produced 767 million roubles of output. The funds raised were scheduled for pre-school facilities, Pravda, 30/4/77, p.2.

163. L.A.Kostin, "Proizvoditel'nost' truda na sovremennom etape", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1980, No.12, p.58.

164. "Narodnoe Khozyaistvo", op.cit., p.35.

165. L.A.Kostin, op.cit., p.59.

166. "SSSR v Tsifrakh", Moscow, 1977, p.62.

167. "Narodnoe Khozyaistvo", op.cit., p.63.

168. D.Karpukhin, "O sootnoshenii rosta proizvoditel'nosti truda i zarabotnoi platy", Planovoye Khozyaistvo, 1983, No.10, p.87. See also E.S.Rusanov, op.cit., p.79.

169. Ibid., p.87.

170. Vestnik Statistiki, 1984, No.3, p.73.

171. Pravda, 7/3/76, p.1.

172. Pravda, 5/3/81, p.1.

173. Yu.Andropov, Pravda, p.1.

174. See D.Dymnov and I.Dmitrichev, Vestnik Statitiki, 1984, No.2, p.68.

175. Yu.Andropov, Pravda, 16/6/83, pp.1-2.

176. Pravda, 5/3/81, p.1.

177. See K.Volkov, Ekonomicheskaya Gazeta, 31/7/83, p.10 and Karpukhin op.cit., p.87-88.

178. L.A.Kostin, Pravda, 9/9/83, p.2.
179. Yu.Andropov, "Uchenie Karla Marksa i nekotorye voprosy sotsialisticheskogo stroitel'stva v SSSR", Kommunist, 1983, No.3, p.15.
180. Yu. Andropov, Pravda, 23/11/82, p.1. See also Pravda, 16/3/83 and Pravda, 5/7/83, p.2, where he reiterates that raising labour productivity is the prime problem and that consumption must be closely geared to work contribution.
181. C.Chernenko, Pravda, 14/2/84, p.1 and Pravda, 23/3/85, pp.1-2.
182. M.Gorbachev, Pravda, 21/2/85, p.2 and Pravda, 11/3/85, p.3 points to the centrality of labour productivity problems.
183. See C.Chernenko, Pravda, 3/3/84, pp.1-2; Yu.Andropov, Pravda, 23/11/82, p.1; L.I.Brezhnev, "Materialy XXV S'ezda KPSS", Moscow, 1976, p.45. The Soviet literature places great importance on the continuity of this question from the time of Lenin. Most articles on questions of labour discipline begin with justificatory quotations from Lenin. See also, V.I.Nasach and E.A.Kotelenets, "V.I.Lenin i stanovlenie sotsialisticheskoi distsipliny truda", Moscow, 1982.
184. Ibid., p.45.
185. For a Hungarian example see L.Hethy and C.Mako, "Work Performance, Interests, Powers and Environment", Sociological Review Monograph, 1972, No.17, pp.123-150. See also M.Harazsti, "Worker in a Worker's State", London, 1979.
186. See P.Dubois, op.cit., pp.21-59; Friedman, op.cit., pp.51-52; "Industrial Sabotage: Motives and Meanings", L.Taylor and P.Walton, in "Images of Deviance", S.Cohen (Ed), London, 1971, pp.219-246.
187. B.N.Kolodizh, "Trudovaya distsiplina i tekuchest'", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1980, No.5, p.127.
188. A.D.Smirnova and K.Sabo, op.cit., p.194.
189. M.Ya.Sonin, "Zametki o trudovoi distsiplina", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1981, No.5, p.74.
190. Ibid., p.75. Kolodizh, op.cit., p.130 suggests that 30-40% of the problem is unrecorded.
191. Ibid., p.74; Smirnova and Sabo, op.cit., p.195; E.Manevich, Voprosy Ekonomiki, 1981, No.9, op.cit., p.59.

192. Trud 29/12/82, p.2.
193. Sotsialisticheskaya Industriya, 17/5/81, p.4.
194. A.Volgin, Pravda, 28/12/82, p.3.
195. Rusanov, op.cit., p.89.
196. Pravda, 24/2/82, p.1. L.I.Brezhnev, "Sovetskie profsoyuzu - vliyatel'naya sila nashego obschestva", Moscow, 1977, p.11.
197. V.Sapov, Pravda, 21/4/82, p.3.
198. A.Volgin, op.cit., p.3.
199. B.P.Kutryev, "Distsiplina truda v dinamike", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1981, No.9, p.36.
200. Yu.P.Sosin, "Faktory ukrepleniya trudovoi distsipliny", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1975, No.5, p.166.
201. E.Manevich, "Organizatsiya truda kak rezerv povysheniya evo proizvoditel'nosti", Voprosy Ekonomiki, 1976, No.8, p.122.
202. Smirnova and Sabo, op.cit., p.195.
203. E.Manevich, Voprosy Ekonomiki, 1981, No.9, op.cit., p.59.
204. M.Ya.Sonin, op.cit., p.69.
205. V.Varavka, Pravda, 11/1/79, p.3.
206. Sonin, op.cit., p.70.
207. T.Baranenkova, "Rezervy ekonomii rabochei sily", Voprosy Ekonomiki, 1980, No.5, p.52.
208. Kolodizh, op.cit., p.129.
209. Ekonomicheskie Stroitel'stva, 1980, No.3, p.51.
210. Sonin, op.cit., pp.67-68.
211. See "Statisticheskie materialy o potreblenii alkogol'nykh napitov i ego posledstviyakh", Molodoi Kommunist, 1975, No.9, p.103. Also R.Lirman and S.Sheverdin, "Piteinyi prilavok i likbez trezvosti", Molodoi Kommunist, 1980, No.2, pp.64-70.
212. B.Levin and M.Levin, Sovetskaya Kultura, 18/12/79, p.6.
213. Yu.P.Sosin, op.cit., p.173; Also R.Armeyev and

A.Illarionov, Izvestia, 17/5/84, p.3, who suggest a 15-30% drop in productivity occurs because of drink related problems after pay day.

214. B.Levin and M.Levin, Literaturnaya Gazeta, 4/7/79, p.13.

215. A.Chernichenko, Komsomol'skaya Pravda, 19/5/77, p.4; S.G.Strumilin and M.Ya.Sonin, "Alkogol'nye poteri i bor'ba s nimi", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1974, No.4, p.38.

216. G.Vychub, Sovetskaya Kultura, 8/12/81, p.3.

217. For anecdotal evidence on managerial complicity with workers with drink problems see J.Yakushenko, Pravda, 11/1/83, p.2; E.Panov, Sotsialisticheskaya Industriya, 7/3/82, p.3; V.Sapov, Pravda, 21/4/82, p.3; A.Nikitinskii, Literaturnaya Gazeta, 24/8/80, p.10. It is interesting to note that a similar phenomenon occurs in the Soviet Armed Services where officers fail to discipline troops in order to avoid exposing their own inadequacies. See A.Cockburn, "The Threat. Inside the Soviet Military Machine", London, 1983, pp.88-92.

218. G.G.Zaigreyev "O nekotorykh osobennostyakh profilaktiki p'yanstva", Sotsiologicheskie Issledovaniya, 1983, No.4, pp.98-99.

219. See for example, L.I.Brezhnev, "Rech na plenum tsentral'no komiteta KPSS, 25/10/76", Moscow, 1976, p.12.

220. See "Sotsial'no-ekonomicheskie problemy narodnonaseleniya", Ashkabad, 1978, p.105.

221. A.E.Kotlyar and M.I.Talalai, "Puti sokrasheniya tekuchesti kadrov", Voprosy Ekonomiki, 1981, No.5, p.34.

222. L.A.Kostin, (Ed), op.cit., p.237; A.E.Kotlyar, Pravda, 13/5/84, p.2 suggests that the figure is now 25 million out of 129 million.

223. T.Baranenkova, "Sokrashchenie tekuchesti kadrov v usloviyakh intensifikatsii proizvodstva", Voprosy Ekonomiki, 1983, No.8, p.76. Also see Sovetskaya Rossiya, 6/6/80, p.3.

224. V.Silin and A.Sukhov, "Distsiplina i otvetstennost' - vazhnye usloviya dostizheniya effektivnosti", Planovoe Khozyaistvo, 1982, No.4, pp.38-39; I.S.Maslova, "Sovershenstvovanie mekhanizma pereraspredelenie rabochei sily", Voprosy Ekonomiki, 1982, No.7, p.50.

225. N.Aitov, Sovetskaya Rossiya, 22/7/79, p.2.

226. T.Baranenkova, op.cit., p.75.

227. M.Ya.Sonin, "Effektivno ispol'zovat trudovye resursy",

Ekonomika i organizatsiya promyshlennogo proizvodstva, 1977, No.4, p.4.

228. A.E.Kotlyar and M.I.Talalai, op.cit., p.35. Those who change occupation take up to 2-3 times longer to achieve the average level of productivity at their new job. See Baranenkova, op.cit., p.75.

229. L.A.Kostin, Ekonomika i organizatsiya promyshlennogo proizvodstva, 1980, No.12, op.cit., p.67.

230. For an example of the survey literature see, Kolodizh, op.cit., p.130; for an example of the anecdotal evidence see L.Kapelyushny, Izvestia, 12/1/84, p.2.

231. Pravda, 30/7/80, p.2.

232. The problem is so intractable and impervious to material incentives as a solution that Komsomol has suggested the establishment of "women's brigades", to encourage marriage and stability in the workforce. Cited from P.de Souza, "The TPC Planning Strategy and its Role in the Development of Siberia", University of Gothenburg Occasional Papers, 1983, No.4, p.15.

233. Kotlyar, op.cit., p.2, suggests that 40% of the labour turnover that occurs is not in the social interest and studies show that 12% on average (and in some instances up to 20%) actually return to their initial place of work.

234. I.S.Maslova, op.cit., p.52.

235. V.Kostakov, "Ekonomnoe ispol'zovanie truda zanyatogo naseleniya", Planovoe Khozyaistvo, 1974, No.7, p.75. I.Malmygin, "Sbalansirovannost' rabochikh mest i trudovykh resursov", Planovoe Khozyaistvo, 1982, No.8, p.55, points out that by the late seventies Soviet agriculture had a shortage of machine operators of 1 million.

236. Kotlyar and Talalai, op.cit., pp.41-42.

237. Baranenkova, op.cit., p.76.

238. See O.I.Shafranov, "Ratsional'noe ispol'zovanie trudovykh resursov neotlozhnaya zadacha", Moscow, 1980, p.67. Also see G.M.Podorov, "Opyt sotsiologicheskikh issledovaniy trudovoi distsipliny na predpriyatiyakh Gor'kovskoi oblasti", Sotsiologicheskie Issledovaniya, 1976, No.4, pp.72-78 and Z.Skarupo, "Sokrashenie tekuchesti i ulushcheni ispol'zovaniya rabochei sily", Planovoe Khozyaistvo, 1977, No.6, pp.118-125.

239. Baranenkova, op.cit., pp.80-82. Also O.Kuznetsov, "Tekuchest' ili podvizhnost'?", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1979, No.4, pp.98-107, who points out that the under-30 age group, who constitute 39% of the workforce, account for 70% of the turnover. Another source, Yu.N.Udovichenko, "Sotsiologicheskii lokator

rukovoditelya", *Ekonomika i organizatsiya promyshlennogo proizvodstva*, 1980, No.10, pp.31-37, suggests that 80% of the turnover at his plant is accounted for by this age group.

240. This was partially reversed in 1980 when labour turnover in industry fell by 12%. The reason for this was the implementation of the decree "O dalneishem ukreplenii trudovoi distsipliny i sokrashchenii tekuchesti kadrov v naradonom khozyaistve". This linked a series of elements like annual leave entitlement, pension rights etc to continuous service. The apparently severe conditions appear to only have had a temporary beneficial influence.

241. A.Afanas'ev, *Komsomol'skaya Pravda*, 22/9/81, p.2.

242. L.Kheifets, "Gosudarstvennoe regulirovanie zarabotnoi platy", *Voprosy Ekonomiki*, 1982, No.6, p.36.

243. E.Manevich, *Voprosy Ekonomiki*, 1976, No.8, op.cit., p.117.

244. V.I.Mukhachev and V.S.Borovik, "Rabochei klass i upravleniye proizvodstvom", Moscow, 1975, p.34. Cited by Ticktin, *Critique*, No.6, op.cit., p.35.

245. See for example, *Ekonomicheskaya Gazeta*, 1982, No.20, p.5 and *Ekonomicheskaya Gazeta*, 1982, No.27, p.5.

246. Manevich, op.cit., p.118; also see V.Parfenov, *Pravda*, 7/4/80, p.2. In 1981 1/3 of all piece-rate workers exceeded their planned output by between 110-130%, a further 1/3 exceeded their planned output by 130%. Karpukhin, op.cit., p.91.

247. Sonin, op.cit., p.7.

248. Parfenov, op.cit., p.2. Y.Chubarov, "Ekonomicheskie usloviya razvitiya Shchekinskogo opyta", *Sotsialisticheskii Trud*, 1976, No.2, p.61, points out that in auxiliary production the level of norms was as low as 27%.

249. Baranenкова, op.cit., p.52.

250. Kostin, op.cit., p.71; G.E.Slezinger, "Reglamentatsiya truda ITR i sluzhashchikh", *Ekonomika i organizatsiya promyshlennogo proizvodstva*, 1979, No.8, pp.81-84.

251. L.Kheifets, "Sovershenstvovanie khozyaistvennogo mekhanizm i material'noe pooshchrenie rabotnikov", *Voprosy Ekonomiki*, 1980, No.9, p.20.

252. R.Gavrilov, "Tempy, faktory i novye pokazateli rosta proizvoditel'nosti truda", *Voprosy Ekonomiki*, 1983, No.3, p.31.

253. E.Manevich, "Voprosy Truda v SSSR", Moscow, 1980, p.41.

254. By the mid-seventies branch and inter-branch norms were only available for 43% of industrial workers. See Chubarov, op.cit., p.61.
255. Kulagin, op.cit., p.105.
256. Kotlyar and Talalai, op.cit., p.40; A.Simakov, Komsomol'skaya Pravda, 23/1/80, p.2.
257. Kheifets, op.cit., p.19.
258. Manevich, Voprosy Ekonomiki, 1976, No.8, op.cit., p.118.
259. G.Pogosyan, "Voprosy sovershenstvovaniya normirovaniya truda", Planovoe Khozyaistvo, 1977, No.4, pp.112-113.
260. Manevich, Voprosy Ekonomiki, 1981, No.9, op.cit., p.60. See also M.Glyantsev, "Normirovanie na urovne sovremennoi tekhniki i organizatsii truda", Sotsialisticheskii Trud, 1981, No.4, p.97.
261. Smirnova and Sabo, op.cit., p.193.
262. Kheifets, op.cit., p.20.
263. P.G.Bunich "Zarabotnaya plata kak ekonomicheskii stimul", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1980, No.7, p.9.
264. I.Karpenko, Ekonomicheskaya Gazeta, 13/1/65, cited by J.Kirsch in "Soviet Wages", Mass., 1972, p.168.
265. Ekonomicheskaya Gazeta, 1982, No.20, p.6.
266. Bunich op.cit., p.11.
267. See for example, W.Brus, "The Soviet Bloc After Brezhnev - The Economic Perspective", in W.Brus, P.Kende and Z.Mylar (Eds), "The Soviet System After Brezhnev", No.5, p.7.
268. See for example, Vestnik Statistiki, 1984, No.11, pp.52-53.
269. V.Cherevan, "Soglasovanie vosproizvodstva rabochikh mest s trudovnoi resursami", Voprosy Ekonomiki, 1982, No.2, p.51.
270. A.Cherednichenko, Komsomol'skaya Pravda, 29/4/80, p.2.
271. Cherevan, op.cit., p.52; For a regional view of the problem with reference to Moscow see L.P.Korolev, "Trudovye Resursy i ikh Ispol'zovanie", Moscow, 1981, particularly pp.20-45.
272. Kostin (Ed), op.cit., p.43.

273. Cited by A.Kotlyar, "Polnaya zanyatost i sbalansirovannost' faktorov sotsialisticheskogo proizvodstva", Voprosy Ekonomiki, 1983, No.7, p.108.

274. For example Myasnikov insists there is no labour shortage but an excess of workplaces. Literaturnaya Gazeta, 19/3/80, p.10.

275. K.Marx, "Capital", Vol.1. op.cit., p.592.

276. K.Marx, "Grundrisse", op.cit., p.606.

277. Ibid., p.607.

278. Ibid., p.608.

279. Ibid., p.609.

280. Marx, "Capital", Vol.1, op.cit., p.592.

281. Ibid., p.593.

282. A.Myasnikov, Trud, 17/7/79, p.2.

283. Pravda, 8/12/82, p.2.

284. G.Kulagin, Sotsialisticheskii Trud, 1980, No.7, p.105.

285. E.Manevich, Ekonomika i organizatsiya promyshlennogo proizvodstva, 1978, No.2, op.cit., p.77; P.Shimenkov, "Ratsional'no i ekonomno ispol'zovat trudovye resursy", Sotsialisticheskii Trud, 1981, No.4, p.109; L.Ponomarev, "Trudovoe vospitanie i kollektiv", Sotsialisticheskii Trud, 1980, No.1, p.7.

286. P.Khromov, Voprosy Ekonomiki, 1981, No.10, op.cit., p.20.

287. Ibid., p.20.

288. T.Samartseva, Literaturnaya Gazeta, 24/9/80, p.10.

289. I.Malmygin, op.cit, p.56.

290. See for example, M.Ya.Berri, op.cit., p.105; B.D.Breyev, "Methods of Planning Employment in the USSR", Moscow, 1979, pp.39-41.

291. See Holubenko, op.cit, pp.14-18. Recent reports in the western press regarding strikes at the Kama River truck plant were furiously denied in Pravda. The scope and details of such events can only be verified from emigre sources usually long after the event.

292. Holubenko, op.cit., pp.14-18; Belotserkovsky op. cit., pp.37-50; Haynes and Semyonova, op.cit., p.75.

CHAPTER 3: THE SHCHEKINO EXPERIMENT.

The aim of this Chapter is to reassess the nature and operation of the experiment initiated at the Shchekino chemical plant in Tula in 1967. The chapter will present an idealised model of the experiment's operation and will consider the experiment's results within this framework. The variants of the experiment that emerged in this early period will also be considered. This chapter deals with the early period of the experiment, from its inception in 1967 until 1973. The reason for the delineation of this period is twofold. Firstly, it corresponds to the period considered by Soviet sources, to represent the successful years of the experiment, both at Shchekino itself and in terms of its extension to other enterprises (1). Secondly, these are the years considered by the major western text concerning the experiment and the intention is to provide a re-appraisal of the nature of the experiment and provide an alternative explanation of these early apparently successful years (2).

The following chapter will consider the period from 1973, through the legislative changes of 1977/1978/1979 up until the present. The second period is characterised at the outset, by diminishing interest in the experiment but increasing pressure for its generalisation. The period 1977-1979 represents another watershed in the history of the experiment as considerable doubts arose about the performance of the Shchekino plant itself and the

possibilities of fully generalising the experiment (3). This resulted in a series of attempts to introduce new conditions for the implementation of the experiment, in 1977 (4) and 1978 (5) which finally culminated in the planning resolution of 1979 (6). The success of these changes, in the post-1979 period will also be considered in the next chapter.

A review of the early period of the experiment can be justified on a number of grounds. Firstly, the detailed empirical work published on the Shchekino plant and the other enterprises that initiated the experiment in this early period, can be utilised to illustrate and verify the theoretical propositions advanced in the first section of this thesis. In this way the continuity of the problems, that it was argued underpin the political economy of the USSR, can be illustrated. Secondly, with the aid of hindsight the early period can be more clearly understood and the tendencies implicit in the early years of the experiment's operation can be more easily extracted. Thirdly, it is intended to evaluate the empirical evidence and present a counter argument to those which are commonly advanced, in both the Soviet and western academic literature, regarding the motivation for, and eventual impact of, the experiment. It is to be argued that the Shchekino experiment was the result of the particular contradictions within the Soviet labour process and that these contradictions determined and modified its operation and conditioned its eventual impact. Before considering the

early years of the experiment a brief survey will be provided of non-Soviet views of the implementation of the experiment.

SECTION 1: WESTERN PERCEPTIONS OF THE SHCHEKINO EXPERIMENT.

Virtually all western commentators adopted a similar initial reaction to the experiment and welcomed its introduction, although often for quite different underlying reasons. Advocates of economic reform in the USSR saw the experiment as a desirable and logical supplement to the other reforms of the mid-sixties (7). Advocates of a market socialist model of economic regulation, for example Brus, viewed the labour allocation mechanism as particularly amenable to the introduction of market forms (8). The experiment could be viewed as a step in this direction that would not only stimulate individual productivity but would also potentially, increase labour mobility and lead to the creation of a more flexible labour market. The fate of the experiment therefore, should shed some light on the possibilities for market socialism as a viable form of economic regulation in the USSR. This question will be returned to in the final chapter of the thesis after the experience of the experiment has been outlined.

For those commentators who believe, along with Von Hayek and Von Mises (9), that it is only via market forms that rational resource allocation can be achieved, the experiment was also welcomed. Wiles for example, recognised

the experiment's potential as a first stage towards the reintroduction of unemployment and a degree of rationality into economic affairs, even if he was sceptical about the extent and scope of the experiment (10).

For pro-Soviet, western commentators the experiment was not seen as a movement towards any form of market socialism. It was explained as an experiment that promoted the further technical refinement of the economic mechanism with little or no implication for the underlying political economy of the system (11).

The introduction of the experiment was criticised from some quarters and the most bitter condemnation came from Chinese sources, for whom the introduction of the experiment represented proof of the restoration of capitalism in the USSR (12). The (then) standard Chinese textbook of political economy characterised the experiment as "Taylorist", with a suitable quote from Lenin attacking the iniquities of the Taylorist logic, and described the experiment as suited to the "demands of the Soviet, revisionist, bureaucratic, monopoly bourgeoisie" (13). For writers in the state capitalist tradition the experiment can be similarly explained in terms of the logic of capitalism in its state capitalist form (14).

These two critical viewpoints are however, inadequate. Neither of them address the problem that if the USSR is some variant of capitalism or simply restored capitalism,

why is it then necessary to implement this type of reform? Given that the specific nature of capitalism implies the existence of the law of value as the mechanism of control, why should an initiative of the Shchekino-type be necessary. To pose the question slightly differently, what sort of capitalism is it that has no labour market, where labour is not free in the dual sense described by Marx and where labour power is not a commodity? Secondly, they fail to examine the experience of the enterprises that undertook the experiment and fail to see that this does not support the notion of any form of capitalism existing in the USSR.

Delamotte, however, has presented the most comprehensive description of the early years of the experiment. His explanation of the motivation for the experiment is based upon a series of features of the Soviet economy and society at this period of time. The combination of potential labour shortages, due to demographic changes, already evident in the mid to late sixties, with overmanning and low labour productivity, by international comparison, are cited as the prime motives (15). What Delamotte does not do is show the interrelationship of these elements nor their derivation from the antagonistic contradictions of the socio-economic system and the necessity, from the point of view of the ruling group, to introduce Shchekino-like initiatives. He locates the experiment within a theoretical framework which is based upon a view of convergence between the Soviet and western industrialised economies. The logic of industrialisation, determined by common technology and

particular techniques of production (particularly production line methods) is invoked to explain common problems that emerge with regard to worker satisfaction and its negative impact upon labour productivity, product quality, etc. The Shchekino experiment is viewed by Delamotte as part of the wave of job-enrichment schemes that emerged in the late sixties and early seventies in the west, and is the Soviet variant (16).

Superficially there are some similarities between the Shchekino experiment and the western examples cited by Delamotte. However, the problem with this analysis is that it fails to explain the motivation for these experiments within the specific political economies of the respective social systems. Shchekino, I would argue, was the result of very different pressures than for example, the scheme introduced at Volvo (17). Furthermore, the experience of the enterprises over time, both in the USSR and the west, was refracted through totally different social contexts and led to quite different results. The introduction and success of innovatory changes in the labour process in the west are determined by a series of forces, like the level of unionisation and collective response, the overall state of the world economy (boom or slump), the level of competition in the particular industry and the state of local labour markets. It will be shown that in the USSR a different series of criteria explain the introduction of experimentation in the first place and condition the eventual results.

In order to comment upon these interpretations and the Soviet views of the experiment, it is necessary to review the form the experiment took in the early years and the initial results.

SECTION 2: A RE-APPRAISAL OF THE NATURE OF THE SHCHEKINO EXPERIMENT.

The introductory section of this thesis outlined a political economy of the USSR that was based upon, and sought to explain, the interrelationship between, a series of contemporary Soviet problems that have given rise to declining economic performance. The continuity of these problems over time can be demonstrated by considering the reasons suggested by Soviet sources, in the late sixties, for the implementation of the Shchekino experiment.

Shilin for example, cites the following reasons; insufficient growth in labour productivity, low intensity of resource utilisation, particularly in the auxiliary and service sectors of Soviet industry (18); the imbalance as a consequence, between the numbers involved in basic production and in auxiliary and service sectors, particularly by international comparison (19); the decline in natural population growth, coupled with the exhaustion of the agricultural surplus population, implying the necessity to develop socio-economic mechanisms to speed the introduction of new technology and free previously underemployed labour (20).

The specific choice of the chemical industry is well explained by both Shilin and Delamotte (21). As Delamotte points out the aim of the 7th Five Year Plan had been to "chemicalise" the economy and to show the importance of

this sector he quotes Krushchev's addition to Lenin's famous dictum,

"If Lenin were alive he would certainly say Communism is the power of the Soviets plus the electrification of the country plus the chemicalisation of the economy" (22).

The continued development of the chemical industry was essential as it provided intermediate inputs for many other sectors of the economy plus providing finished products that were exported to other socialist states. Perhaps more important however, is the relationship between the output of the chemical industry and the agricultural sector. Reference has already been made to the problems of this sector (23) and an increased output of chemical fertilisers could potentially increase crop yields, expand the cultivated and cultivatable area, increase agricultural productivity and output, free labour for more productive sectors of the economy and provide more consumables to aid the operation of incentive systems, as suggested in Figure 1 (24). Furthermore, the chemical industry was in receipt of significant amounts of imported plant, equipment and machinery hence the desirability of rationalising labour organisation within the chemical industry to utilise more efficiently the scarce and costly foreign equipment, raising shift coefficients and not allowing this equipment to lie idle (25). The intention was presumably, to attempt to replicate western manning levels with a hoped for knock-on effect to other sectors. How successful this was

will emerge later. Apart from these latter two points, which were perhaps more specific in the case of the chemical industry, the problems facing the industry were broadly similar to other sectors of the economy. Namely, labour shortages, lax labour discipline, high unplanned labour turnover, under-utilisation of capacity as a consequence etc.

The choice of the Shchekino plant is also explained by Shilin and Delamotte and they both provide a brief history of the plant's performance (26) and cite as particular reasons the under-utilisation of fixed capital, which makes costs of production rise by as much as 50% as a consequence, levels of labour productivity below that planned, and over-manning in comparison with comparable western plants. What they do not note is that in the Spring of 1967, six months prior to the implementation of the experiment, personnel chiefs from Shchekino went to their ministry in Moscow to ask for permission to hire an additional 400 workers (27). This was not to expand production but to simply keep the plant operational and attempt to increase the level of capacity utilisation. However, in less than a year the plant had effectively overcome the need for new labour and begun to shed existing labour resources (28). This dramatic turn around effectively economised 1000 workers in the first twelve months of the experiment's operation, the 400 additional workers requested plus those actually released in the first year. This can be explained by the nature of the experiment

and its immediate results.

The overall aim of the experiment was to raise labour productivity (29) and although theoretically this could be achieved by a variety of means, the experiment adopted at the Shchekino enterprise marked a novel departure for the Soviet economy at this time. The aim of the experiment was to tie the remuneration of the Shchekino workforce more closely to the enterprise's performance, strengthening the weak link between work and rewards already noted (30). This in itself was not novel as all previous incentive schemes, introducing premiums, bonuses etc., had had this as their ultimate objective. The novelty of the Shchekino experiment, and its potential importance for the rest of the Soviet economy, facing supposed labour shortages, stemmed from the source of the material incentives. The experiment was based upon the internal rationalisation of the plant's labour organisation, the release of surplus personnel and use of the economised wage fund for material stimulation (31). Tolstikov summarises the experiment as,

"..... keeping the total wage fund unchanged while reducing the number of employees, thus helping to increase the earnings of the remaining workforce and thus considerably increasing the collective's material stake in increasing output and labour productivity." (32).

Therefore, with a wage fund and plan targets stabilised until the end of the plan period, the Shchekino enterprise

committed itself to release 1000 workers in the period from October 1st, 1967 to the end of 1970 (33). This is a significant contrast to the demand for additional workers in the Spring of 1967, already noted, and represented approximately 12% to 13.3% of the Shchekino workforce (34).

Delamotte has argued that the experiment was based upon four essential elements (35); firstly, the 'scientific' reorganisation of labour within the enterprise; secondly, the stimulation of personal interests via financial incentives; thirdly, the raising of worker's qualifications and skill levels by a programme of retraining; and finally, increased participation. Delamotte argues that these features explain the early successes of the experiment, but this needs to be re-examined and the contribution of each of these elements has to be re-appraised, if the longer term experience of the Shchekino enterprise and the fate of the experiment generally is to be understood. There are grounds to doubt two things; firstly, that all these elements contributed equally to the experiment's early performance and secondly, that these elements alone are sufficient to explain the experiment's progress in this initial period.

The basic source for raising labour productivity, in the first phase of the experiment, was to come through the freeing of surplus labour and the internal re-organisation of the workforce. As already noted, the contradictory

TABLE 24: COMMISSIONS ESTABLISHED TO IMPLEMENT THE SHCHEKINO EXPERIMENT.

1. Central All-Combine Commission - under the direction of the enterprise director with a membership including Party, Trade Union, management, engineering and ITR representatives.
2. Commission to Increase the Volume of Production and Improve the Utilisation of Production Funds - headed by the plant's Chief Engineer.
3. Commission to Rationalise the Organisation of Energy Services and the Repair of Power Equipment - headed by the plant's Chief Power Engineer.
4. Commission to Rationalise the Organisation of Maintenance and Repair Facilities for Control and Measuring Instrumentation and Automated Systems - headed by an Engineer.
5. Commission to Rationalise the Work of ITR Workers - headed by the Chief Combine Engineer.
6. Commission to Rationalise the Organisation of Maintenance and Repair Facilities for All Technological Equipment - headed by the plant's Chief Mechanical Engineer.
7. Commission to Rationalise the Organisation of Control of Production of Final Products - headed by the Central Factory Laboratory.
8. Commission to Mechanise Manual and Heavy Labour.
9. Commission to Evaluate and Introduce New More Progressive Wage Systems.
10. Commission to Improve Working Conditions and Technical Safety.
11. Commission to Redeploy Workers and ITR Freed During the Course of the Experiment.
12. Commission to Verify the Introduction and Elaboration of Norms and to Calculate the Optimum Number of Workers.

Source: I.G.Shilin, op.cit., pp.18-19.

internal dynamic of the Soviet economy system, leads to labour hoarding at the enterprise level, which represents management's unpenalised response to uncertainty (36). Therefore, the first necessity was to identify the superfluous workers and it should be noted that over half of the internal commissions established, identified in Table 24, had the rationalisation and tightening of internal labour organisation as their objective (37).

For each sub-division of the Shchekino plant and workforce the commissions, aided by external scientific research institutes where necessary, calculated the optimal number of workers and produced 'technically substantiated' norms based upon that number of workers (38). In 1966, only 17.3% of Shchekino workers worked according to 'technically substantiated' norms and by 1967 this figure had only risen to 20% (39). However, by 1969 80% of basic workers and 55% of auxiliary workers had switched to new norms and by 1970 the figure reached 95% (40). Shkurko provides a more detailed breakdown for this early period which is reproduced in Table 25.

The introduction of technically validated norms and the work of the commissions was seen to be both the prime method for identifying surplus workers and also raising the intensity of the work of those who remained in the plant. All commentators agree that the greatest significance came in the norming of repair and maintenance work that had

TABLE 25

THE DIFFUSION OF TECHNICALLY VALIDATED NORMS AMONGST SHCHEKINO WORKERS (as a % of the Total Number).

<u>Category of Workers</u>	<u>% working to Technically Validated Norms</u>				
	1966	1967	1968	1969	1970(plan)
Productive Workers in Technological Shops	17.3	23.5	77.2	90	95
Repair Workers	26.8	39.2	54.2	70	76

Source: S.I. Shkurko, op. cit., p.37.

previously either had no norms or very lax norms (41). Karpenko in particular, notes that the introduction of 'technically validated' norms had been impossible to achieve, either by moral exhortation or by direct orders, prior to the experiment but now appeared to advance alongside the experiment's progress (42). Given the problems of introducing and raising norms this is one of the experiment's most attractive features for the ruling group. However, one of the potential problems of this process was that the norms were developed within the plant and not set from branch or inter-branch manuals. Hence, even though norms were either raised or introduced for the first time, they still reflected the localised trade-off between management and the workforce. In this sense the experiment reflected previous practice rather than changing it.

The process of internal re-organisation, also included the rationalisation of production. For example, several shops producing the same products were amalgamated. The effect of this, apart from potential scale economies, was to free skilled workers, often with substantial training, skills and experience, who had previously been involved with lower-level supervisory duties for more directly productive work (43). This type of transition was achieved fairly smoothly because in the case of shop chiefs and foremen returning to the job of skilled machine operators, the portion of the economised wage fund they received

compensated for any lost earnings, the differential was not great anyway, plus it had the added advantage for them of freeing them from the pressures of supervisory work (44).

Coupled with the combination of production facilities was the combination of jobs. For example, in both basic and auxiliary production rationalisation occurred; where previously ten operatives had tended ten machines, but with considerable idle time, the labour process was re-organised so that six operatives tended the same ten machines and four would be released. Also apparently disparate basic production work was combined. This occurred particularly, in repair and maintenance brigades where, because of the nature of the work, considerable slack had developed. Here the number of workers was simply cut. The other alternative adopted was to combine what had been previously separate functions. For example, one repair worker would be responsible for both mechanical and electrical repair work or basic production workers would take on the repair work of their equipment. This produced a situation where two or three related occupations per worker was not unusual and in some sectors of the plant this even rose to four or five occupations per worker (45).

In this early phase of the experiment some attempt was made to reduce heavy manual tasks, particularly in loading and unloading work by introducing new technology plus attempts were made to mechanise repetitive office tasks. In this early period this did not contribute greatly to the

overall numbers released but the intention was that this should change in the second phase of the experiment (46).

Rationalisation of repair and maintenance facilities was of particular importance to the Shchekino enterprise. The nature of the technology involved in the chemical industry demands regular service and maintenance and given the record of Soviet plant and equipment this also needs efficient repair. Rather than having individual repair and maintenance staffs and equipment tied up in each shop, with the consequent problems of idle-time and under-utilised capacity, repair facilities were centralised. Furthermore, the zone of servicing was extended so that any servicing brigade would be responsible for a wider area of plant and equipment. This leads to savings in terms of both staff and more efficient use of equipment and, as Shilin points out, repair functions can be best carried out in centralised specialist shops where particular repair skills and expertise can be developed (47). Given the large numbers employed in this sector, the high proportion of manual work and the consequently low productivity this was not only important for Shchekino itself but also had great potential for the rest of Soviet industry (48).

A similar exercise was carried out with regard to laboratory services. Again the nature of chemical production necessitates close scrutiny of product quality, both in terms of its final usage and in order to guarantee safety within production. Again, instead of a duplication

of laboratory services in each shop or sub-division of the enterprise they were centralised and furthermore, the number of control tests was dramatically reduced and parallel tests eliminated (49). For example, the number of chemical analyses per shift in the production of ammonia, were reduced from 5 or 6 to 2 or 3. This led to a reduction in the number of control tests by around 4,000. The wider significance of this is explained by Sharov, who points out that at this time 40,000 people were employed in control services at enterprises within the Ministry of the Chemical Industry and because of poor organisation it was estimated that 18% of analyses were duplicated. Sharov suggests that more than 10,000 workers could be released simply by rationalising these control services (50).

Overmanning was not just a shop-floor phenomenon. The contradictions of the Soviet system are such that an enterprise director will also hoard managerial expertise. The experiment was also directed at the management structure of the enterprise and sought to rationalise where possible, thereby encouraging those who remained to broaden the sphere of their responsibilities, combine previously disparate tasks and improve their qualifications and skills as a consequence. In the first phase of the experiment the absolute numbers released from this source were obviously not as large as from other sources but this re-organisation should not be overlooked. Economic regulation and discipline, if it is to perform its essential functions, has to apply to both management and to the workforce, as

already pointed out (51).

Altogether the experiment tightened up the internal distribution of labour resources within the enterprise. Furthermore, greater control was placed upon the utilisation of time and the length of the working day; late arrival, early departure, over-long meal breaks and intra-shift idle time were all curtailed (52). As a result of this rationalisation and tighter organisation it was possible to free workers from previous jobs (or perhaps more correctly, non-jobs). If production levels could be maintained then labour productivity must necessarily rise but the aim was to go beyond this and to stimulate an even greater increase in both output and productivity via the use of the economised wage fund. It should be noted that thus far the improvement of the labour and production organisation of the plant is the result of the close scrutiny of the plant's work by the internal commissions and the external bodies that assisted them.

The material incentives dimension to the experiment operated in the following manner. The economised portion of the wage fund, which arose as a consequence of the release of workers with the total fund remaining constant, was split into two portions (53).

One half of the amount was left at the disposal of the shop chief or foreman responsible for the shop where the saving was made and where the additional work was absorbed. This

individual, after consultation with the relevant internal commission, comprising both management and Trade Union representatives, could use the economised funds to raise the wages of any worker by up to a maximum of 30% of his basic wage rate (54). This was only done if the worker had increased his work load, or if he had combined what were formally separate tasks or if he had developed a second (or third) skill or occupation, or if he had significantly increased the intensity of his work and thereby raised his individual productivity. On the shop floor, in basic and auxiliary production and in the repair and maintenance brigades, this operated in a direct manner. In the previous example, if the ten operatives were now reduced to six, half of the economised wages of the four workers released could be split amongst those who remained, providing the increment did not exceed 30% of their basic wage. In this sense those workers could potentially see a direct result from the re-organisation of their shop and the release of superfluous workers.

However, this needs some qualification as it should be remembered that the payments are discretionary and not automatic and furthermore, the 30% increment was the maximum and not the norm. As Karpenko points out, after attending a meeting of the commission that determined additional wage payments, the process was not over-generous (55). Each request for additional payments was closely scrutinised and no claim would be accepted if no economies to the wage fund had been made. The payment to the

individual worker was only made if the commission was convinced that some real increase in productivity or responsibility had been achieved. The point is that the economised wage fund could not simply be used by shop chiefs to ingratiate themselves with their workforce (56). If in any year the economised portion of the wage fund was unutilised for wage increments then under the original terms of the experiment, the balance could be transferred to the material stimulation fund and carried forward to the next year for similar use (57).

The other half of the economised funds were passed to a centralised fund that was controlled by the enterprise director. This could be used by him to increase the basic wage rate, again by a maximum of 30%, of particular categories of personnel (58). This related to managerial, technical or administrative staff who increased their workload, productivity or responsibility under the terms of the experiment. Extra payments could also be made to ITR staff whose ideas led to an increase in productivity. Some portion of this economised fund could also be used as special incentives for workers detailed to particularly important tasks or in areas where norms are difficult to apply and work difficult to measure. This relates mainly to the maintenance and repair sectors where material incentives were thought to be most desirable to encourage multiple-jobs, skill and qualification upgrading, etc. (59). The fund could also be used to increase the pay of lower grade management and foremen who extended the scope

of their responsibilities (60).

It was argued by Soviet sources, that the implementation of the experiment would lead to benefits for everyone connected with the enterprise; the workforce remaining at the plant would receive additional payments and enhanced responsibilities; the enterprise could rationalise its operations and increase output and productivity for the same wage expenditure; for the ruling group chemical output would grow and superfluous workers could be released to be redeployed elsewhere. This begs the question of whether the interests of those released were enhanced by the experiment. This will be considered after the initial results of the experiment are reviewed and a different explanation for these results is suggested.

In the Soviet Union the release of surplus workers poses the immediate problem of what to do with the dismissed workers? As previously noted the Soviet constitution and labour codes guarantee the worker the right to work and even if job security is not absolute on an individual level, workers are nevertheless relatively secure as a social group. However, the novelty of the Shchekino experiment was that dismissals were no longer to be solely individual and particularly political but were to affect a sizeable proportion of the workforce (12% to 13.3% initially), potentially cutting across all sections of the enterprise's organisational, occupational and hierarchical structure. It was the case that these decisions would be

influenced by the individual characteristics of the workers involved. For example, those workers chosen for release would be those the shop or enterprise viewed as least valuable. Consequently, in any shop an individual with a record of labour discipline infractions, (tardiness, absenteeism, drunkenness, a record as a "rolling stone" etc.) would be most likely to be released. For the first time in their working lives, workers in the enterprises where the experiment was implemented, saw a connection developed between common labour infractions and the implementation of an administrative sanction. Previously even where sanctions existed they were often unused by management, ignored by workers or ineffective. It could be expected that under these new circumstances a lesson would be learned by those who remained and those who were released, leading to a tightening of labour discipline in the plant and a modification of industrial behaviour.

The general point to be made is that the intention behind the experiment was that it should operate as a semi-impersonal force reducing the accepted and usual levels of job security enjoyed by the Shchekino workers. The language of the experiment conveys this impression very clearly with talk of 'rational utilisation of labour resources' and the 'scientific organisation of labour' implying an irresistible force and logic of modern industrial production.

SECTION 3: AN IDEALISED MODEL OF THE EXPERIMENT'S OPERATION.

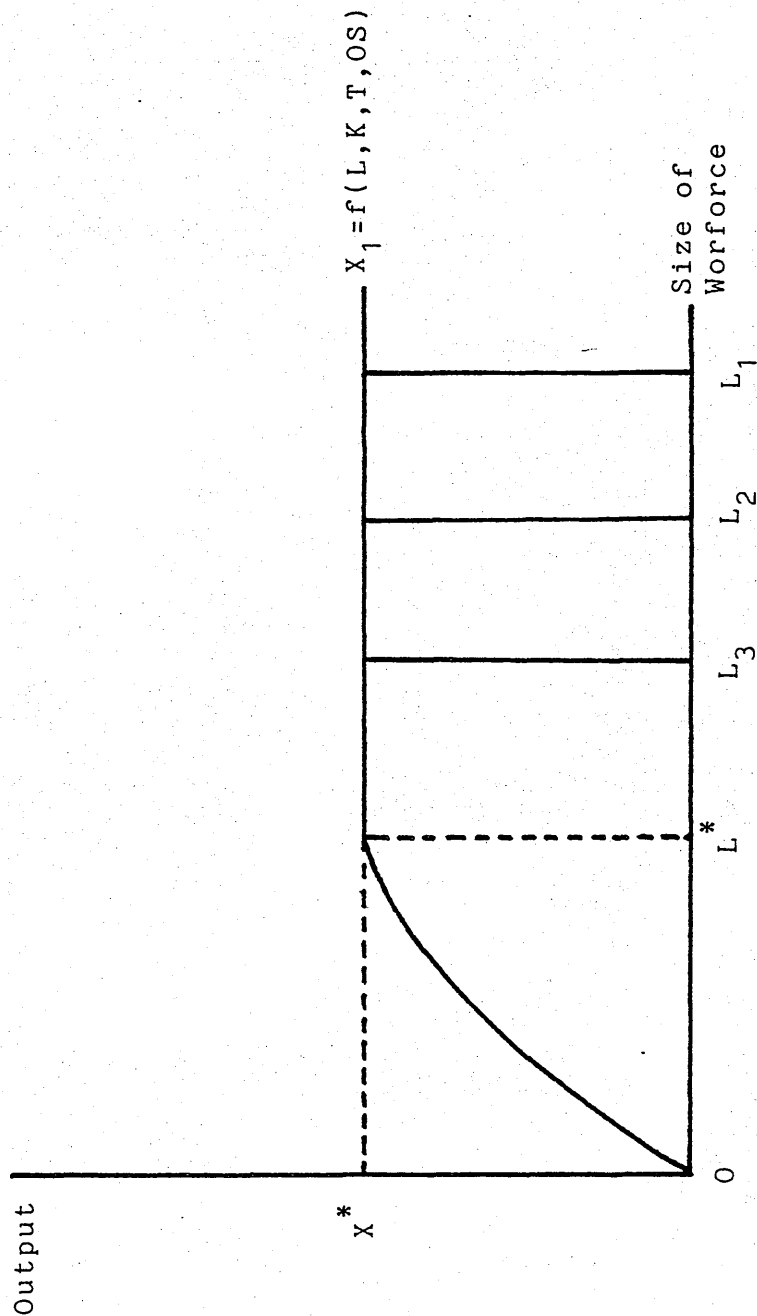
The preceding section of this chapter sought to outline the essential features of the Shchekino experiment. In this section it is intended to develop a simple model to explain the functional relationships underlying an idealised view of the operation of the experiment. As well as tracing these linkages the model can be used later for evaluating the results of the experiment and explaining the problems that developed as circumstances changed.

Figure 2 illustrates the original situation at the enterprise.

The assumption underlying the model is that current output (Ox_1), is a function of the plant's capital stock (K), the level of available technology (T), the size of the plant's labour force (L), and the organisational efficiency with which these factors are utilised which is reflected by the plant's occupational structure (OS). The average labour productivity of the plant (aLP), is the total output divided by the number of workers (Ox_1/L) and this provides a measure of the intensity of work. The shape of the production function reflects diminishing returns to additional units of labour and it is assumed that this has a flat section after L^* , where the marginal productivity of

Figure 2

- X^* = Planned output.
- X_1 = Actual output.
- L^* = Optimum workforce.
- L_1 = Actual workforce.
- $L_1 - L_3$ = Reductions in the workforce due to the experiment.
- $T = \bar{T}$ = Level of technology (fixed).
- $K = \bar{K}$ = Capital stock (fixed).
- OS = Occupational Structure (reflects efficiency of labour organisation and work intensity).
- X_1/L = Average Labour Productivity (aLP).



labour is equal to zero. (It could in fact be argued that marginal productivity becomes negative after this point). L_1 represents the original size of the labour force and the section L^*-L_1 indicates the level of overmanning at the plant in the original time period and reflects the enterprise directorate's desire for a "safety factor" of hoarded labour and the workforce's negative control over their own labour process. The hoarded labour will be reflected in the occupational structure of the plant, the preponderance of auxiliary, service, repair and maintenance workers and this will have a negative influence upon indicators like absenteeism, idle-time, and labour turnover. This is ultimately reflected in labour productivity or work intensity.

The underlying assumption of the experiment is that L_1 is sub-optimal and the optimum workforce is that which achieves the output level Ox_1 with the minimum expenditure of live labour, ie L^* . The freeing of workers will move the size of the workforce towards L^* and will simultaneously cause the average labour productivity to rise. This initial achievement will be realised through the activities of the internal commissions making reductions in the non-productive workforce, re-norming labour and generally tightening up the internal distribution of labour.

It should be noted that the initial cuts in the workforce need not necessarily lead to the optimum size of workforce.

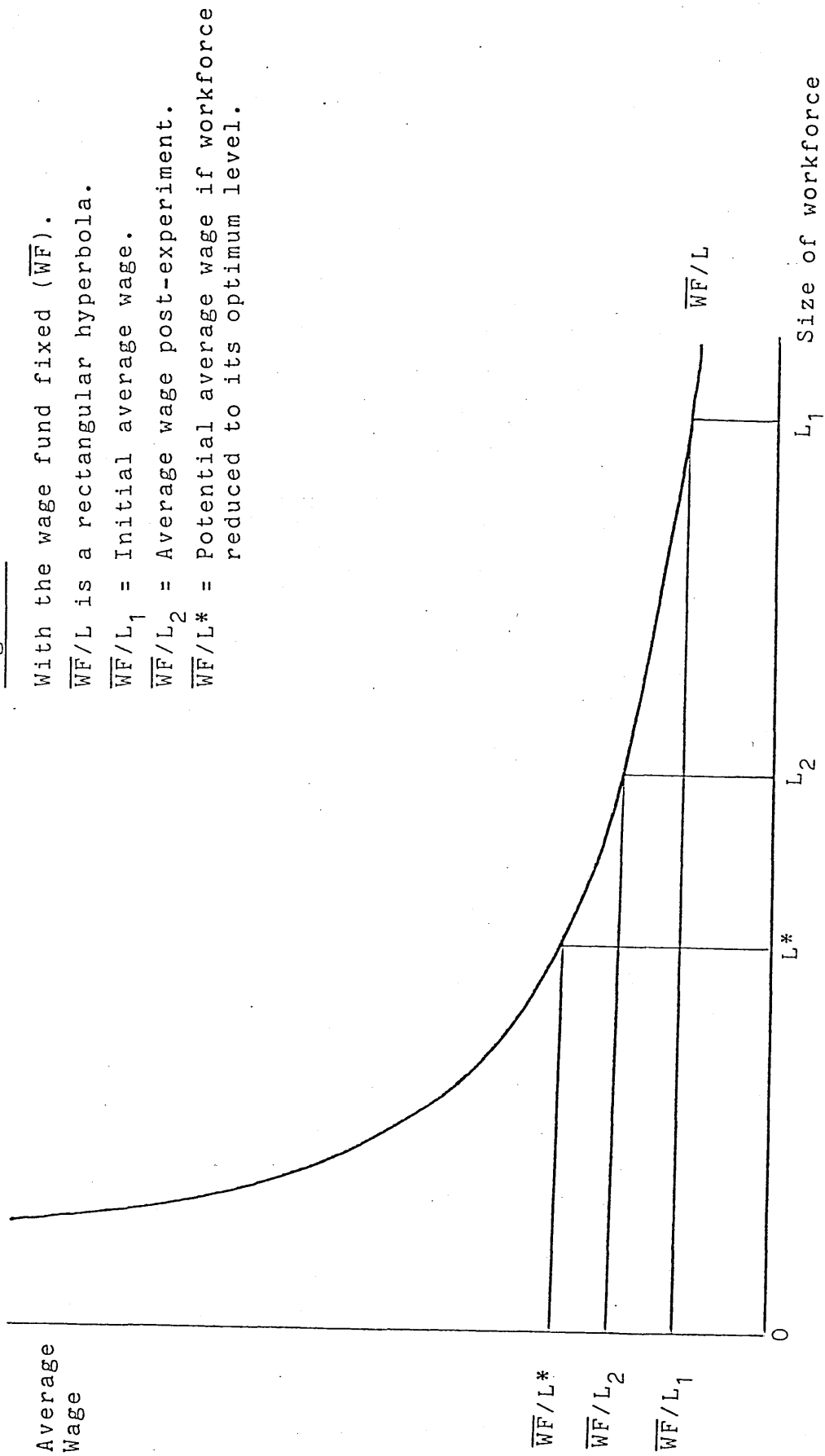
Successive rounds of cuts may well move the plant nearer to its objective but it should be clear that in the first instance these reductions will be based upon rule-of-thumb estimations coupled with management's desire not to destroy completely their safety factor.

It will be assumed that in the initial period, the current level of output OX_1 is also the planned level of output OX^* . This planned level of output, reflects the underestimation of capacity that the negative control operated by the plant's workforce, forces upon both plant management and the ruling group in the process of plan formulation. A central part of the initial period of the experiment is the assumption that this planned output level remains constant and furthermore, so too does the plant's wage fund (WF).

This latter point is illustrated in Figure 3.

With a fixed wage fund and the right to redistribute the economised portion of the wage fund that arises from the dismissal of some proportion of the workforce, average wages (WF/L) must rise. (The actual distribution of income within the plant is ignored here and it is assumed that the economised wage fund does not distort the previous pattern of income distribution and the level of wage increments reflects the general pattern of wages). The eventual increase in wages will be determined by the cut in the

Figure 3



workforce and any centrally imposed conditions. (For example, the 30% maximum increase but as the reduction in numbers was approximately 12%-14% we may assume that all the economised wage fund could be redistributed). The expectation was that rising individual wages would stimulate personal commitment to work and individual initiative.

The overall expected impact of increasing wages was that average productivity (or intensity of work) would rise and this is shown in Figure 4.

Average labour productivity is a function of a number of elements. Firstly, the capital stock available at the plant and the level of technology will determine the eventual outcome of particular expenditures of labour time. At the Shchekino plant in the short run, these two elements can be assumed to be fixed.

Secondly, changes in the average wage are intended to provide an incentive effect within the plant. If WF/L is rising, as the workforce is cut, then the expectation is that this will raise productivity. This was particularly the case at Shchekino as the wage increases were administered in such a way that only those who combined jobs, increased their responsibilities or worked more intensively, received the wage increment. The eventual

Figure 4

\bar{wF}/L_1 = Initial average wage.
 aLP_1 = Initial average labour productivity.

WI = Work intensity.

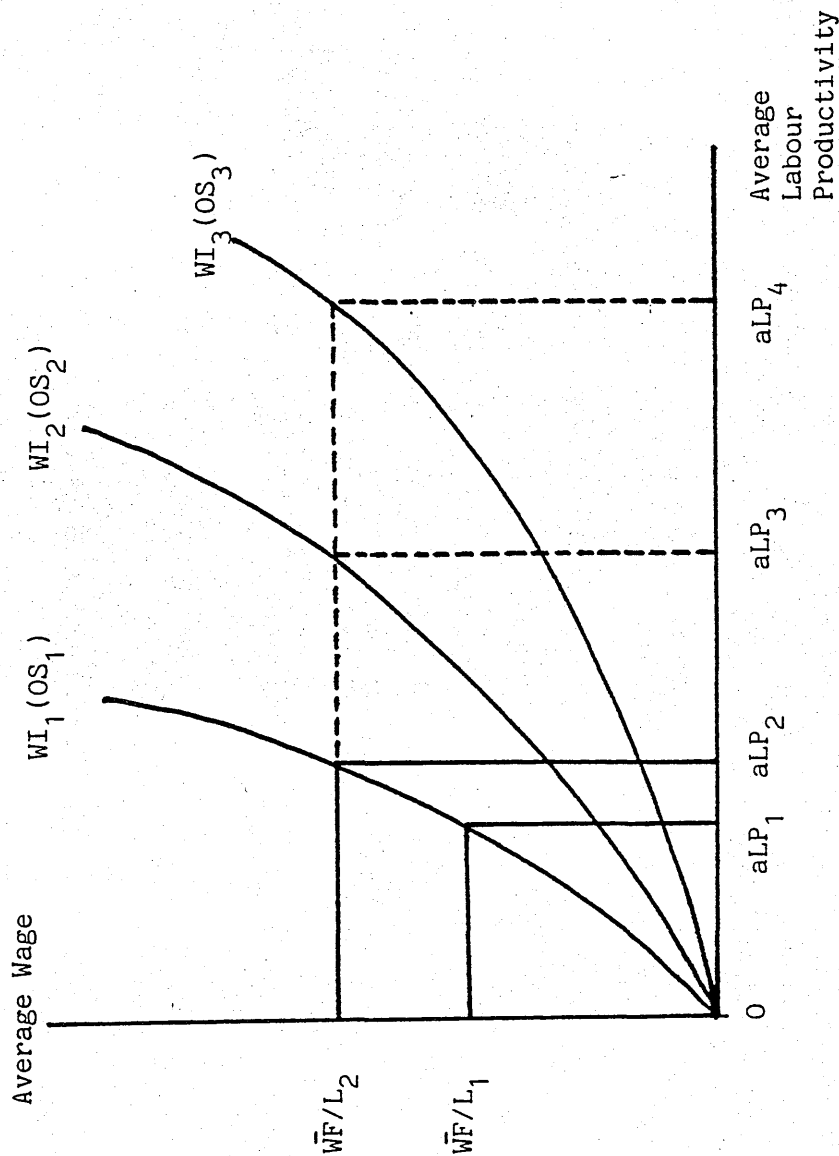
OS = Occupational structure.

WI = $F(\bar{wF}/L, \bar{K}, \bar{T}, OS)$.

OS_1 OS_2 OS_3

\bar{wF}/L_2 = Post experiment average wage.

Same wage change $\bar{wF}/L_1 - \bar{wF}/L_2$ yields differing productivity increases depending upon the level of work intensity.



impact of this incentive effect however, will depend upon the availability of consumer goods and services. Consequently, it may be assumed that the wage increases will have a diminishing effect upon average labour productivity and the gradient of the curve will reflect the availability of consumer goods, i.e. the fewer the consumer goods, the smaller the incentive effect and the steeper the gradient.

Thirdly, according to Soviet sources the only other element that will determine average labour productivity is the level of labour organisation. As the efficiency of organisation is improved the curve will shift outwards, so that at any wage level the level of average productivity will have improved. I would argue that this is only a partial explanation as the level of labour organisation contributes to the degree of employment security and it is this that is the determinant of the curve's position. This factor will affect the intensity with which work is performed and therefore, average labour productivity. In Soviet enterprises, pre-Shchekino, this security factor was almost total and it was this that had a negative impact upon work intensity. Labour indiscipline, idle time, absenteeism, alcoholism, etc., all reflect the high level of employment security. However, if employment security is reduced it will potentially reduce these problems and labour productivity at any wage level will rise. In the

case of Shchekino, the increase in the average wage was directly linked to the reduction in the workforce, which suggests that the two processes will occur in tandem. (Soviet commentators make no explicit mention of the role of this security factor which will be returned to later).

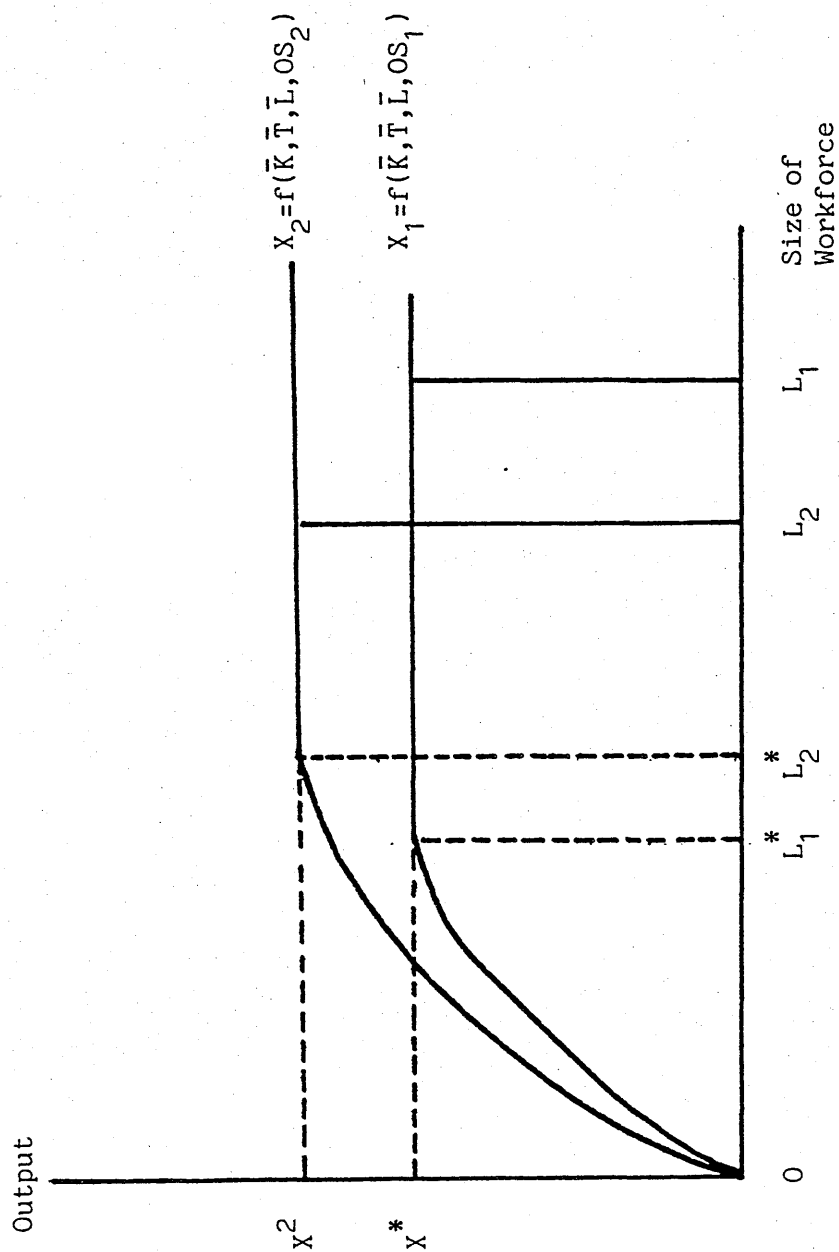
Figure 5 illustrates the overall expected impact of the experiment.

The rise of average labour productivity, even with a reduction of numbers, will lead the plant to produce in excess of the previously planned level. The previously planned output, after all accommodated and reflected the slack labour organisation and low intensity of work within the plant. Note the optimum size of the workforce, in relation to available technologies and existing capital stock, has changed and reflects the improved level of labour organisation and the increasing efficiency of capacity utilisation.

Therefore, the expectation is that reducing numbers, improving internal organisation and raising average wages will lead to an increase in average productivity (work intensity) and increasing output. For the ruling group the attainment of this, with a constant wage fund, has the effect of increasing the socially produced surplus and with the increase in plant discipline should guarantee this over time. If it is assumed that the wage fund represents a

Figure 5

OX^* = Original output.
 OX_2 = Post experiment output.
 L_1 = Original workforce.
 L_2 = Workforce post experiment.
 L_1^* = Original optimum workforce.
 L_2^* = Post experiment optimum workforce.
 OX_1/L_1 = Original aLP.
 OX_2/L_2 = Post experiment aLP.

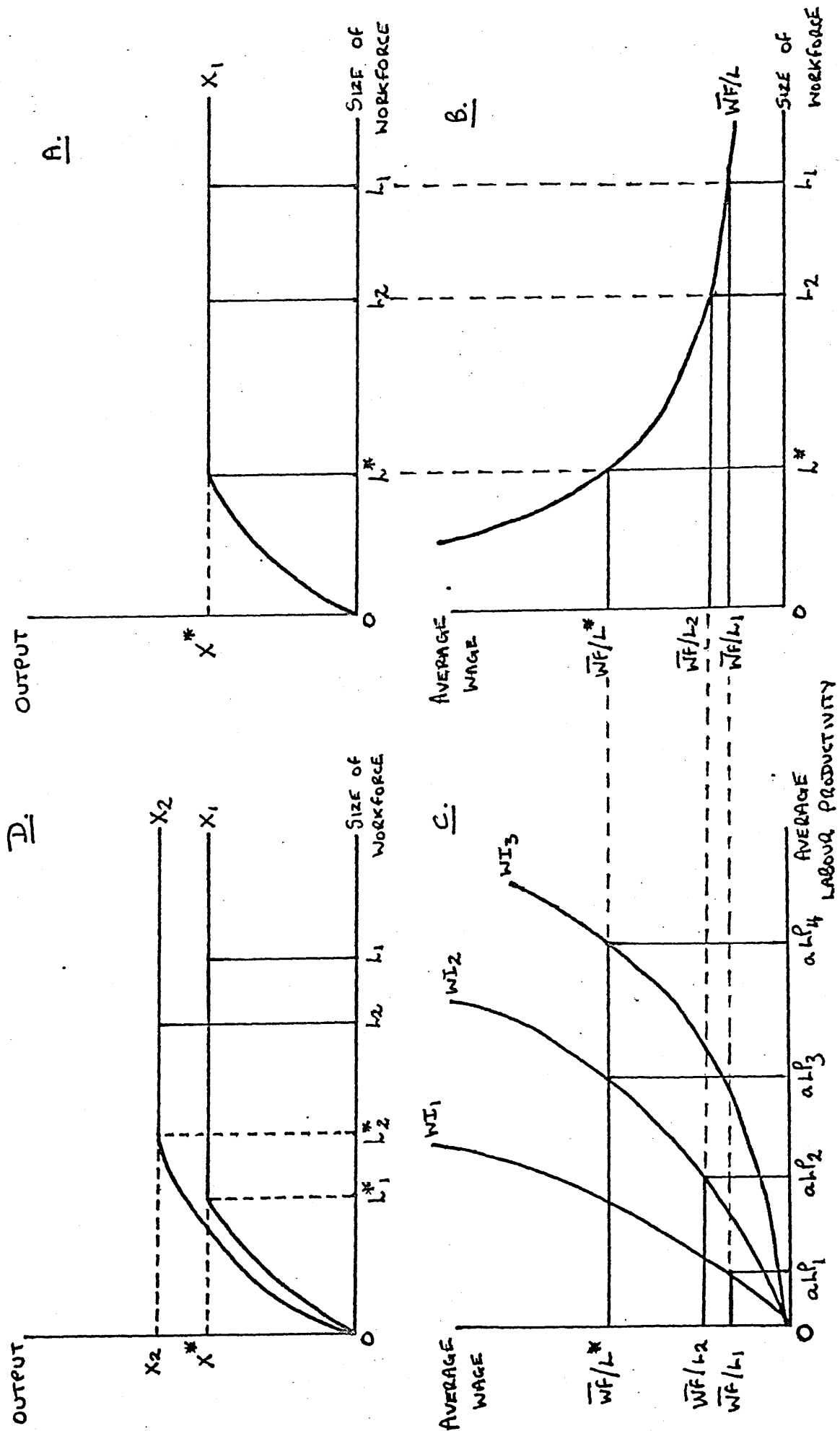


bundle of consumer goods then the surplus will increase so long as output in the post-experiment period exceeds the pre-experiment output.

If the released workers are employed elsewhere and contribute to output so much the better. Even if they were released and simply paid the minimum wage and did not work, the surplus could still rise if the difference in output achieved by their release, exceeds the amount of consumer goods they can purchase with the minimum wage.

The whole model is described in Figure 6.

Figure 6



SECTION 4: THE INITIAL RESULTS OF THE EXPERIMENT.

The most obvious immediate results were the changes that took place in manning levels at the Shchekino plant. This was particularly the case in the first two years of the experiment, when the numbers released increased rapidly and by mid-1969, 870 workers had been released (61). Shilin provides a detailed breakdown of the situation at the plant after 15 months of the experiment, as at January 1st 1969, by which time 800 had been released (62). The distribution of these workers by general occupational category is shown in Table 26, and as would be expected 75% of those released are workers.

From the available evidence it is difficult to calculate what proportion of each category of personnel these figures represent but it is plausible to assume that in the initial phase they reflect the plant's overall occupational structure (63). The fact that so many workers could be released so quickly is further evidence of the level of overmanning in Soviet enterprises. A closer examination of the occupations of those released, provided in Table 27, allows the basis of this overmanning to be identified.

It should be noted that only 27% of the workers released were basic production workers and up to 1/10/68 almost the same number of workers were released from the three repair categories as were released from basic production. This

TABLE 26

LABOUR RELEASED AT SHCHEKINO UP TO 1/1/1969.

	<u>BY</u> <u>1/10/68</u>	<u>BY</u> <u>1/1/69</u>
All Personnel Released of Whom,	520	800
I.T.R.	110 (21%)	159 (20%)
Office Workers & Employees	21 (4%)	32 (4%)
Workers	389 (75%)	609 (76%)

SOURCE: Shilin, op. cit., p.33.

TABLE 27

WORKERS RELEASED AT SHCHEKINO BY OCCUPATION.

	<u>1/10/68</u>	<u>1/1/69</u>
Machine Operators	97	141
Machinists & Pump Operators	44	77
Laboratory Assistants & Control Workers	32	68
Machine Repair & Maintenance	58	71
Electrical Equipment Repair & Maintenance	40	47
Instrument Repair & Maintenance	40	68
Others, of Whom,		
Dispatch Loaders & Unloaders	—	21
Warehousemen & Assistants	—	22
Drivers of Electrical Cranes	—	10
Other Occupations	—	84
<u>TOTAL</u>	<u>520</u>	<u>800</u>

SOURCE: - Shilin, op. cit., p.33.
Delamotte, op. cit., p.155.

again, is a vivid example of the overmanning in particular areas of the occupational structure in Soviet enterprises concentrated in the repair and maintenance sectors, auxiliary production and service sectors, particularly warehouse work, internal transport and loading and unloading. An example of this imbalance is the fact that in the period 1968-69, because of increases in the plant's productive equipment it would normally have led, prior to the experiment, to an increase in repair staff of 20%, rather than the reductions that were actually achieved (64).

The manner by which these savings in labour were achieved is summarised in Table 28. With the exception of the penultimate category and the unspecified last category, all the savings were achieved as a result of internal re-organisation of labour. This accounts for 85% of the labour released up until 1/10/68; 81% up until 1/1/69; and 85% by the end of 1969.

The initial impact of the experiment on production at Shchekino was impressive and Sharov points out that in the first two complete years of the experiment output volume grew by 80% and labour productivity rose by 87% (65). By January 1970, in comparison with 1966, output had grown by 86.6% and labour productivity had more than doubled and was the highest in the whole branch (66). Finally, taking the whole period from 1966 to the end of 1970, labour productivity rose by 140% (67) and the volume of production

TABLE 28

THE SOURCE OF PERSONNEL SAVINGS.

	<u>1/10/68</u> ⁽¹⁾	<u>1/1/69</u> ⁽¹⁾	<u>31/12/69</u> ⁽²⁾
Uniting & Consolidating Shops	48	64	82
Uniting Services with Production	49	92	121
Combining Occupations & Widening the Service Zone	209	347	433
Strengthening the Organisation of Labour	97		
Revising the Schedule of Laboratory Work	16	39	43
Introduction of Time Norms & Technically Substantiated Norms.	70	170	240
Mechanisation of Manual Labour	21	23	68
Other Measures	10	65	—
<u>TOTALS</u>	<u>520</u>	<u>800</u>	<u>987</u>

SOURCES:- (1) Shilin, op, cit., p.33. (2) Shkurko, op. cit., p.12.

doubled (68). As Shilin points out, the growth of labour productivity and average wages, resulting from the implementation of the experiment, dramatically exceeded their planned levels. By the end of the plan period the Shchekino plant had achieved a growth in labour productivity more than double the planned level (69).

The economic results therefore, were impressive at the Shchekino plant but it should be noted that even though the experiment was initiated here, it was closely followed by eight other plants. These plants, which followed the Shchekino example in 1968 were not confined to the chemical industry but included plants from textiles, petro-chemicals, and metallurgical sectors of the economy (70). The results achieved at these plants are summarised in Table 29. Once again the numbers released in such a short period of time indicate the level of overmanning, (the average reduction being 13.275%) and all the plants achieved impressive growth in labour productivity in comparison with previously planned levels. It is worth noting that in most instances the volume of sales did not increase by more than the previously planned level but nevertheless this was achieved with a much reduced workforce. (This data will be returned to later).

In the following year 1969, the experiment was further extended and Shkurko cites two additional groups of enterprises; firstly, 25 enterprises in the petro-chemical sector (23 of which were part of 3 associations), which in

TABLE 29.

PLANTS UNDERTAKING THE SHCHEKINO EXPERIMENT.

(For Production, the last year of the Experiment is expressed as a percentage of the first.).

A = During the Experiment		B = Previous Planned Growth.				
		Increase in		Increase in		Reduction in Personnel
		Sales Volume	Labour Productivity	Average Wage		
1.	Furmanov, Spinning & Weaving, No.2.	A 7.6 B 7.6	29.2 11.6	27.5 —	15.1 —	
2.	Severonikel' Combine	A 27.7 B 27.7	42.9 34.2	17.9 15.3	11.5 —	
3.	Novomoskovsk Chemical Combine	A 41.3 B 37.4	36.9 15.7	18.6 6.5	17.1 —	
4.	Kuibyshev Synthetic Rubber Enterprise	A 40.6 B 40.6	27 13.5	9.7 1.7	14.5 —	
5.	Chelyabinsk Metallurgical Plant	A 7.1 B 7.1	61.3 53.1	12.6 6.7	7.0 —	
6.	Pyshma Copper Plant	A 7.9 B 7.9	22.4 8.6	10.2 4.2	11.8 —	
7.	Balakovo Chemical Fibre Plant	A 18.6 B 18.6	38.8 23.2	24.8 11.5	16.2 —	
8.	V.V. Kuibyshev Synthetic Fibre Plant	A 12.2 B 11.5	23.7 7.4	14.8 2.5	13.0 —	

SOURCE: — Baranenkova, op. cit., p. 52.

less than three years shed 11.6% of their workforce; the second group comprised 5 enterprises in the textiles sector which shed 10% of their workforce. The results achieved by these plants were also impressive as labour productivity rose on average by 22%, as opposed to the previously planned level of 12% (71). Tables 30 and 31 illustrate how labour was economised at these two groups of enterprises and, as at Shchekino itself, the majority were released as a result of tightening internal labour organisation and job combination, particularly in the area of service and repair work (72). For example at Pyshminsk this took the form of metal workers in repair shops taking on electrical welding work (73).

By 1970, 60 enterprises were participating in the experiment and in the period 1968-1969, 12,000 workers were released (74). By 1971 the number of enterprises operating on experimental lines had more than doubled to over 120 (75). These enterprises employed 700,000 workers and raised their labour productivity on average by 22%, 10% more than envisaged in the plan.

The intention of the experiment was to affect not only manning levels, production and productivity but also workers' remuneration. Tables 32, 33, and 34, indicate the volume of savings made and the uses to which these economised funds were put at Shchekino. A number of features emerge.

TABLE 30

THE REASONS FOR LABOUR RELEASED AT 25 PETRO-CHEMICAL ENTERPRISES.

	<u>NO. RELEASED</u>	<u>%</u>
Combining Skills	760	11%
Widening the Servicing Zone	3200	46%
Improving Labour Organisation	1400	20.8%
Strengthening Control over Labour & Reducing the Ratio of Transport Services	735	10.7%
Centralising Repair & Auxiliary Services	291	4.2%
Other Measures	<u>481</u>	7.1%
	<u>6,867</u>	

TABLE 31

THE REASONS FOR LABOUR RELEASED AT 5 TEXTILE ENTERPRISES.

	<u>NO. RELEASED</u>	<u>%</u>
Strengthening and Widening the Servicing Zone, Combining Skills & Other Measures to Improve Labour Organisation	490	40
Better Management Techniques	204	17
Introduction of Automation	370	30
Other Measures	<u>160</u>	13
	<u>1,224</u>	

SOURCE: Shkurko, op, cit., p.12.

TABLE 32

SUMMARY OF WAGE SAVINGS & DISTRIBUTION UP TO 1/1/69.

	<u>1/1/68</u>	<u>1/10/68</u>	<u>20/11/68</u>	<u>1/1/69</u>
Numbers Released	343	—	689	800
Numbers receiving wage increments from economised funds	578	1308	1422	2655
As a % of the Workforce*	7.5%	—	19.4%	36.8%
Total Monthly Saving to the Wage Fund	R 30,228	R 45,800	R 59,524	R 67,900
Total Additional Monthly Payments	R 6,046	R 15,226	R 16,864	R 26,600
Payments as a % of the Total Saving	20%	33%	28.3%	39.2%
Average Increment per worker Receiving Additional Payments	R10.46	R11.64	R11.85	R10.01

* Based on the Assumption that
initial workforce was 8,000.

SOURCE: I.G. Shilin, op. cit, p.37.

TABLE 33

THE USE OF THE ECONOMISED WAGE FUND FROM START OF EXPERIMENT UP UNTIL 20/11/68.

DISTRIBUTION OF THE ECONOMISED WAGE FUND.		FROM THE DIRECTORS' FUND.		FROM SHOP CHIEFS' FUND.		TOTAL
DIRECTORS'	SHOP CHIEFS'	TOTAL RECEIVING	TOTAL REPAIR	NO'S RECEIVING	NO'S RECEIVING	
FUND.	FUND.	ADDITIONAL PAY- MENTS & TOTAL AMOUNT.	WORKERS RECEI- VING ADDITIONAL- MENT & TOTAL PAYMENT & TOTAL AMOUNT.	ADDITIONAL PAY- MENTS.	ADDITIONAL PAY- MENTS.	
R 32,393	R27,131	636 R7065	500 R4723	786 R9799	1422 R16864	
54.4%	45.6%	Average Received R11.10	Average Received R9.44	Average Received ed R12.46	Average Received R11.85	
% of Directors' Fund Distributed		=	22%			
% of Shop Chiefs' Fund Distributed		=	36%			
% of Total Distributed		=	28%			

SOURCE: Shilin, op.cit., pp: 38-39.

TABLE 34.

DISTRIBUTION OF ADDITIONAL PAYMENTS BY CATEGORY OF WORKER UP UNTIL 20/11/68.

TOTAL NO.		ITR	OFFICE EMPLOYEES		WORKERS
1422	R16864	125 R2202	9	R120	1288 R14542
AVERAGE PAYMENT	R11.85	R17.6		R13.33	R11.29

SOURCE: Shilin, op. cit., pp 42-43.

Firstly, the number of people receiving additional payments as a result of the experiment, grew steadily over the early years but by 1969 only a little over a third of the workforce remaining at the plant, were in receipt of additional payments. Furthermore, by the beginning of 1969 only a little over 40% of the economised wage funds were actually being re-distributed. As a consequence of these two features the average increment per worker receiving additional payments was 10.1 roubles.

Secondly, it is clear from Table 33, that even though over half of the economised funds went to the centralised Director's Fund, this was distributed less than the Shop Chief's fund (22% as opposed to 36%). The bulk of the Director's Fund went to repair workers, as anticipated, but their average increment was below the plant average. The remaining funds from this source were distributed to ITR and employees who on average received above the plant average, see Table 34. The distribution of additional payments and their average size at Shchekino, reflects the enterprise's pre-experiment employment and wage structure. Shkurko suggests that in the main however, workers received a larger wage increment, in percentage terms, than their ITR counterparts; for example at the five textile plants cited workers received on average a 14.6% increment in comparison with ITR who received only 11.3% (76). This effect would eventually distort the pattern of wage distribution within the plant and further level wages between ITR and workers (77).

Thirdly, the average additional payment overall at Shchekino was 11.85 roubles and this needs to be placed in perspective. In 1968 the average wage at Shchekino was planned to be 1,497 roubles per annum or 124.75 roubles per month. The actual wage was 1,610 roubles per annum or 134.16 roubles per month. Therefore, the average increment represented approximately 9.5% of the planned wage or 8.8% of the actual wage. The point is that even when allowing for the variations that existed between plants, this is a very small percentage increase.

The benefits accruing to the workforce were however, not just received in the individualised wage. As previously noted, the worker's remuneration although primarily received in this way, also consists of social consumption determined at both the enterprise and societal level. During the early years of the experiment part of the economised wage funds were directed towards social provision by the enterprise and this is outlined in Table 35. Clearly the provision of better nursery, hospital, clinic, recreational and holiday facilities is potentially desirable for all workers in the plant. In this way even those workers not receiving any individualised wage increment from the experiment's operation have some material interest in the experiment. Furthermore, if the enterprise's workforce is reduced then the facilities available will be allocated amongst a smaller number of workers improving access for those who remain. The improved

TABLE 35

USE OF FUNDS FOR SOCIO-CULTURAL MEASURES AND HOUSING CONSTRUCTION (000S R).

	1st ½ year		
	<u>1967</u>	<u>1968</u>	<u>1968</u>
1. Financing Nursery School Provision	17	—	3
2. Reviewing the Stock of the Polyclinics, Hospital and Dispensary	18	40	74
3. Partial Payment of the Losses Incurred in the Upkeep of the Cultural-Sporting Institute and Pioneer Camp.	75	21	57
4. Maintenance of Two-Tourist Centres and Purchasing Equipment	65	53	107
5. Purchase of Cultural and Sporting Equipment	18	17	17
6. Other Expenses	7	6	60
7. Transferred to Material Stimulation Fund	—	59	59
	<u>200</u>	<u>196</u>	<u>377</u>

SOURCE: - Shilin, op. cit., p.52.

economic performance of the enterprise was therefore, reflected in improved social provision for those who remained (78). In this sense using economised wage funds to provide better facilities further increases the insecurity of those released who will no longer have access to them as this is determined via the worker's relationship to the enterprise. Those released therefore, provide the means to increase social provision and by their release are penalised and excluded from the use of that enhanced provision.

Within the plant the experiment had a dual effect upon the skill structure. Firstly, the choice of those workers to be released was such that the most skilled and experienced workers were retained. Hence the average skill level rose (79). Secondly, this was further enhanced by the impact of combining jobs, extending service zones and increasing individual's work responsibilities which made it necessary to retrain workers, raise educational levels and increase skill and expertise. In the first 18 months of the experiment, 1,000 employees mastered a second or related occupation and over 4,000 raised their qualifications (80). The overall impact of this was that the average wage rate category rose from 4.6 in 1967 to 4.9 in 1969 (81).

A further result of the experiment noted by all the commentators, was the increased level of labour discipline at the enterprise (82). This is illustrated on Table 36. A summary of the elements include; a better attitude towards

TABLE 36

THE STATE OF LABOUR DISCIPLINE AT THE SHCHEKINO PLANT.

	<u>1966</u>	<u>1967</u>	<u>1968</u>
TOTAL PUNISHMENTS	409	489	330
TOTAL FAILING TO REPORT	457	304	168
MAN-DAYS LOST	1,054	607	316

SOURCE: - Shilin, op. cit., p.59.

work emerged; equipment was more fully and effectively utilised; the absentee and idler became a rarity; the rhythm of work became more stringent; even though there were fewer people in the enterprise the number of overtime hours was reduced by one third; idle time both between shifts and within shifts was reduced; a widespread acceptance of technically validated norms emerged. Furthermore, the level of spontaneous labour turnover at the plant was significantly reduced by the experiment (83). Within a year of the introduction of the experiment labour turnover fell from 17.3% to 10.4% and idle time was cut in half, in the same period (84).

A similar pattern emerges from the other plants cited who initiated the experiment in this early period. Labour discipline generally improved and for example, at Furmanov No.2, turnover fell from 22% in 1967 to 15% in 1969 and the number of labour discipline infractions was halved. At the Bashkir Petro-Chemical Association (Bashkirneftekhkhimzavod), within 9 months of the experiment's introduction, labour turnover fell by 25% and idle time was reduced by a similar proportion (85).

Finally, as a parallel to the experiment internal khozraschet mechanisms were strengthened at Shchekino (86). This took the form of setting wholesale prices for output, on a shop by shop basis and the fulfillment of these value criteria became the basis for the payment of wages and bonuses. This led, according to Karpenko to a steep rise in

claims, made by one shop against another (87). This economic sanction worked in the following manner; one shop suffering losses in production due to the actions of another, could be reimbursed with the full cost being met by the shop responsible. This economic discipline was intended to supplement the impact of increasing labour discipline within the plant, by disciplining management staff.

But what of the workers released?

As pointed out by Sharov, the Shchekino plant, in the initial period, was in a fortunate position and was able to absorb a relatively high proportion of the workers released. As he explains,

"We did not have to worry about the released personnel being without work for a short period. A large plant to manufacture synthetic fibres is being built near our combine and several thousand workers were needed" (88).

Therefore, the workers released could be absorbed into the immediate locale. This was of great significance for the introduction of the experiment as the majority of workers chose to change their occupations rather than to change their place of residence. If management could at least offer the possibility of staying in the same locality it would ease the uncertainty involved in the experiment's implementation and potentially reduce discontent and

resistance. Delamotte provides a useful breakdown of the eventual destination of the workers released which is reproduced in Table 37. It should be noted that over 25% of those released were not reintegrated into the plant and even if only 50 were made redundant, another 100 left of their own accord.

As Baranenkova points out, the experiment was implemented primarily at enterprises which had undergone expansion and required new staff hence this pattern of absorption of released labour in the immediate vicinity was replicated at the other plants cited (89). For example, at Novomoskovsk during the 9th Five Year Plan, 2,000 workers were scheduled to be released but an additional 2,034 were required over this same period for new shops (90). In the initial year of the experiment at Novomoskovsk of the 556 workers released, 450, almost 80%, were placed at the plant; at Balakovo 70% of those released were placed at the plant (91); at the Novokuibyshev oil processing plant of the 1,000 workers released in 6 months, over 60% were reintegrated into the plant (92). This pattern was replicated at a wide range of other plants .

The overall experience of the Shchekino plant was broadly confirmed by the other enterprises who initiated the experiment in this early period. To summarise; a broadly similar proportion of workers were released from all the plants cited (in the range from 7% to 17% with the average around 12%); the structure of the personnel released

TABLE 37

THE PLACEMENT OF THE 800 WORKERS INITIALLY AFFECTED BY THE EXPERIMENT.

<u>WORKERS</u>	<u>ABSORBED AT THE ENTERPRISE</u>	<u>PLACED IN VICINITY</u>	<u>DEPARTED</u>
Transferred to Vacant Posts in Plant	337		
Transferred to Synthetic Fibre Plant		101	
Transferred to Other Organisations			5
Left of their own Accord			76
Redundant			33
Entered the Army			38
Left to Continue Studies			19
	<u>337</u>	<u>101</u>	<u>171</u>
<u>I.T.R. & OFFICE WORKERS</u>			
Transferred to Vacant Posts in Plant	102		
Transferred to Synthetic Fibre Plant		31	
Transferred to Other Organisations			20
Left of their own Accord			20
Redundant			17
Retired			1
TOTAL - 800	<u>439</u>	<u>132</u>	<u>229</u>
Total Absorbed at Enterprise & Transferred in Vicinity = 571			
Total Redundant = 50			
Total Left of their own Accord = 96			

SOURCE: Delamotte, op. cit., p. 159.

reflected the overall employment structure with workers in the majority; the sources of released labour were similar (combining jobs, widening the service zone, improving labour organisation, strengthening norms etc); the workers released were predominantly auxiliary and repair sector workers; the results in terms of output and productivity were all positive; labour discipline increased and turnover and infractions decreased; average wages rose; social provision at the enterprise level improved; the majority of the workers released were re-absorbed in the same enterprise, association or locality.

This picture is confirmed by an analysis of 50 enterprises operating along Shchekino lines at the beginning of 1970 (93). Of the 23,800 workers released, 14,900 (62.5%) were reintegrated at their old plants, 4,700 to fill newly created vacancies and 10,200 to fill previously vacant places. Of the 8,900 who left their enterprise almost half chose this course of action themselves. Of the total numbers released, 79% were workers, 17% ITR and 4% office workers, administrators and management (94).

Generally speaking the experiment was an economic success and the impressive results at Shchekino and elsewhere, confirm the problems of underemployment, low labour productivity, excess capacity due to mal-utilisation of existing resources, characteristic of Soviet industrial enterprises. If this could be achieved at the experimental plants then the generalisation of the experiment to all

industry would lead to significant advantages for the ruling group. A further indication of these possibilities emerged from a survey undertaken by the Chemical Industry's Bureau for the Scientific Organisation of Labour. After analysing 140 enterprises under their auspices, they concluded that if the experiment was generalised to all of them, then 18% of the existing workforce could be released and this would represent sufficient staff for all new planned projects for the following five years (95).

The actual successes and the future potential of the experiment led the CPSU and the Council of Ministers to support the experiment and press for its further extension (96). Before considering the attempted generalisation this early period needs to be critically reassessed.

SECTION 5: A RE-APPRAISAL OF THE INITIAL RESULTS OF THE SHCHEKINO EXPERIMENT.

The enthusiastic response to the initial results of the experiment and the pressure for its generalisation needs to be tempered by a closer look at the manner in which the results were achieved, the nature of the results themselves and the problems implicit in the logic of the experiment. The problems that emerged in this initial period relate specifically to the implementation of the experiment at plant level and the relationship between different plants undertaking the experiment. The broader problems involving the generalisation of the experiment and the maintenance of its impetus at the individual plant level, will be considered in the next chapter.

From the outset the enterprise management and the CPSU were faced with the problem of explaining to workers, in a supposedly socialist society, that they were to be made redundant. Soviet commentators stress the initial 'psychological barriers' that had to be overcome (97). These barriers are the inevitable result of more than sixty years of political propaganda that contrasts the secure position of the Soviet worker, the leading force in the planned socialist economy, with the insecure position of his counterpart under capitalism, subject to the vagaries of the market, with the possibilities of lay-offs, redundancies and long-term unemployment. The experiment

therefore, demanded from the outset a vast amount of preparatory work by the party cells in the enterprise. In this early period Party, Trade Union, YCL and personnel department cadres carried out an extensive educational campaign, delivering lectures and answering workers' questions to alleviate their fears and to reduce these barriers (98). A.Mokin, the party secretary at Shchekino, points out that it was necessary that workers should not evaluate their dismissal negatively (99). The reason for this, apart from alleviating the problems of any immediate discontent was that these same workers were to be redeployed elsewhere and a reduction in their morale or self-image would presumably affect their attitude to their new work and their productivity. Unlike a capitalist firm, who can dismiss workers with little concern about their ultimate fate or destination, the Shchekino management had to re-integrate a considerable number of the workers dismissed and ultimately all those released would be re-employed. Therefore, instead of talk of 'dismissal' or 'redundancy' they spoke of 'releasing' or 'freeing' workers and a process of 'resource utilisation' or 'the scientific evaluation of work', etc. (100). The process, which for a capitalist employer is veiled behind the cloak of commodity fetishism, was in the Soviet instance, shrouded in a spurious 'scientism'.

As already noted in this first phase, at Shchekino and the other plants cited, the problems of dislocation were limited by the absorption of surplus labour in the

immediate locale. However, as Karpenko points out, workers tended to evaluate the experiment in a negative manner and workers in the plant talked of their comrades who had "fallen under the experiment", much in the same way as you would describe someone falling under a train (101).

Nevertheless, at Shchekino, of the 515 employees released in the first year of the experiment, only 7 appealed to the Trade Unions and of these the Trade Unions accepted the dismissal of 3 workers. Of these 3 only 1 worker appealed to the courts and was eventually reinstated (102).

To ease the problems of potential discontent at the level of the enterprise, the plant's personnel department attempted to give great consideration to job placement of the workers released. The individual worker's skills, experience, education, length of service, family situation, etc., were all taken into account before he was offered a number of alternative jobs with similar work content, working conditions and comparable wages (103). However, as V. Polikarpov, the plant's personnel chief, admitted, not everyone was satisfied (104). It may be assumed that the figures for complaints, showing such a small number of claims for redress, minimise the actual level of discontent the experiment created. Furthermore, the personnel department's degree of success can be gauged from the fact that over 100 workers who were released chose to look for new jobs on their own and very few took the personnel department's advice and transferred to similar occupations

in other towns (105). It can be inferred from this that these workers, judging by their actions, would not be wholly satisfied with the experiment nor the official options offered to them.

The second aspect of the 'psychological barrier' concerns the enterprise management staff who were wary of the experiment in the initial period (106). The experiment ran counter to their previous experience of the logic of the planning process and aimed to discourage them from hoarding labour. This generated fear of not being able to cope with existing plan targets with a reduced workforce, fear of taking on too much additional responsibility and fear of failure. This led the more conservative to resist the implementation of the experiment, after all some of their number were also to be released and their work reorganised. To overcome this, significant retraining of management and supervisory staff took place at the plant and this stressed the role of economic, 'value' levers in plant management (107). It is interesting to note that amidst all the staff reductions only one group grew in size and that was the department of economists at the plant (108).

Management's initial negative response was rational because even though the experiment could be viewed as an attempt to give them more decentralised control, for example further plant level wage differentiation to reward hard work etc., it also reduced their room for manoeuvre. As pointed out in Chapter 2, the mechanisms of economic regulation also need

to discipline management if they are to be successful and the Shchekino experiment sought to do that by reducing an important element of management's safety factor, hoarded labour. Karpenko however, points out that this initial negative response was only overcome in the medium term, when management saw the advantages of reduced absenteeism and tightened labour discipline giving rise to a more stable, hard-working workforce (109). After all if this can be achieved it partially obviates the need for hoarded labour. (Their longer term perception of the experiment will be considered in the next chapter).

The successful implementation of the experiment can therefore, only be achieved if correct attention is paid to overcoming potential resistance by careful preparation (110). Coupled with this is the necessity to mobilise resources to train staff remaining at the plant, particularly those combining occupations or changing jobs completely. For example, at Shchekino a number of laboratory workers, freed by the revised schedule of tests, re-trained as lathe and machine operators (111). This all necessitated a huge training programme and at Shchekino alone, in the first 18 months of the experiment, 700 specialists were involved in 'on-the-job' training (112).

The question of careful preparation and adequate training was reiterated at a seminar on the experiment at Tula in 1970 (113). All the participants stressed the need for proper preparation and pointed out the great damage that

could be done to the aims of the experiment if it were implemented by administrative pressure or if short cuts were attempted by bureaucratic bullying of either enterprises or workers (114). In other words it was recognised that the experiment could only be implemented with at least the acquiescence of the workforce and that attempts to impose it could only lead to failure.

The 'psychological barriers' to the implementation of the experiment, like the necessity for the experiment itself, stems from the peculiar political economy of the USSR. Workers, who can only be dismissed in special circumstances and who are ideologically supposed to be the leading force in the society, are able to exert their negative control even over reforms and experiments designed to control them. The ruling group needed the experiment to shake out surplus labour and to guarantee a usable, predictable and growing surplus but even in the process of instituting this reform they cannot disregard the workforce's interests which act as a form of negative control. The experiment, rather than becoming an anonymous, impersonal, external constraint on the workforce, like the role played by unemployment under capitalism, is forced to partially accommodate worker's interests and this gives rise to the need for careful preparation, resettlement and training. Clearly if a ministry, let alone the whole economy, wished to convert all its enterprises to the Shchekino method, it would be unlikely to be able to achieve this simultaneously because of the resource needs for preparation and training at each

plant. The transition to the experiment is more likely to be piece-meal and relatively slowly accomplished and will tend to concentrate on particular enterprises. Ministries will allocate resources in the first instance, for enterprises to make the transition to the method if the enterprise is important to the ministry's overall performance, if it is in the process of expanding and is short of workers, if it is a large scale recipient of foreign technology or if it has particular problems. The blanket adoption of the experiment would be impossible for the ministry because it would not have sufficient resources to do the job properly and the resulting discontent it would engender if it were forced through, from both workers and management, would negate its potential.

The implementation problems at enterprise level may well prove difficult, their further significance will be examined in the next chapter, but they were obviously overcome at Shchekino and the other plants cited. Their successes however, raise the further question, how were the impressive economic results achieved? Soviet commentators argue that the harmony of social and individual interests created through the material incentives offered by the experiment accounted for the success and their western counterparts broadly concur (115). It is difficult to support this argument for a number of reasons.

Firstly, as already noted, the material incentives offered to individual workers were relatively small (116). (See

Tables 32,33,34). Baranenkova for example, complained that the wage increases were in the main a small proportion of basic wages for all categories of employees and could not be expected to fulfil their role as a stimulus for more conscientious work (117). For the relatively poorly paid repair workers they may have been sufficient to narrow the gap between themselves and basic production workers but even for them it was a relatively small proportion of their wage (118). (See Table 33).

Secondly, not everyone remaining in the enterprise received a wage supplement. At Shchekino only approximately 40% of the workforce received any increase in wages as a result of the experiment (119).

Thirdly, of this number a much smaller percentage received the maximum additional wage supplement of 30%; for example at Shchekino, 1.4%; at Severonikel', 2.2%; and at Furmansk No.2, 3.8% (120). As already suggested, none of this was automatic and had to be argued for in the relevant commission, so we may assume that a significant increase in effort was necessary to achieve the 30% maximum.

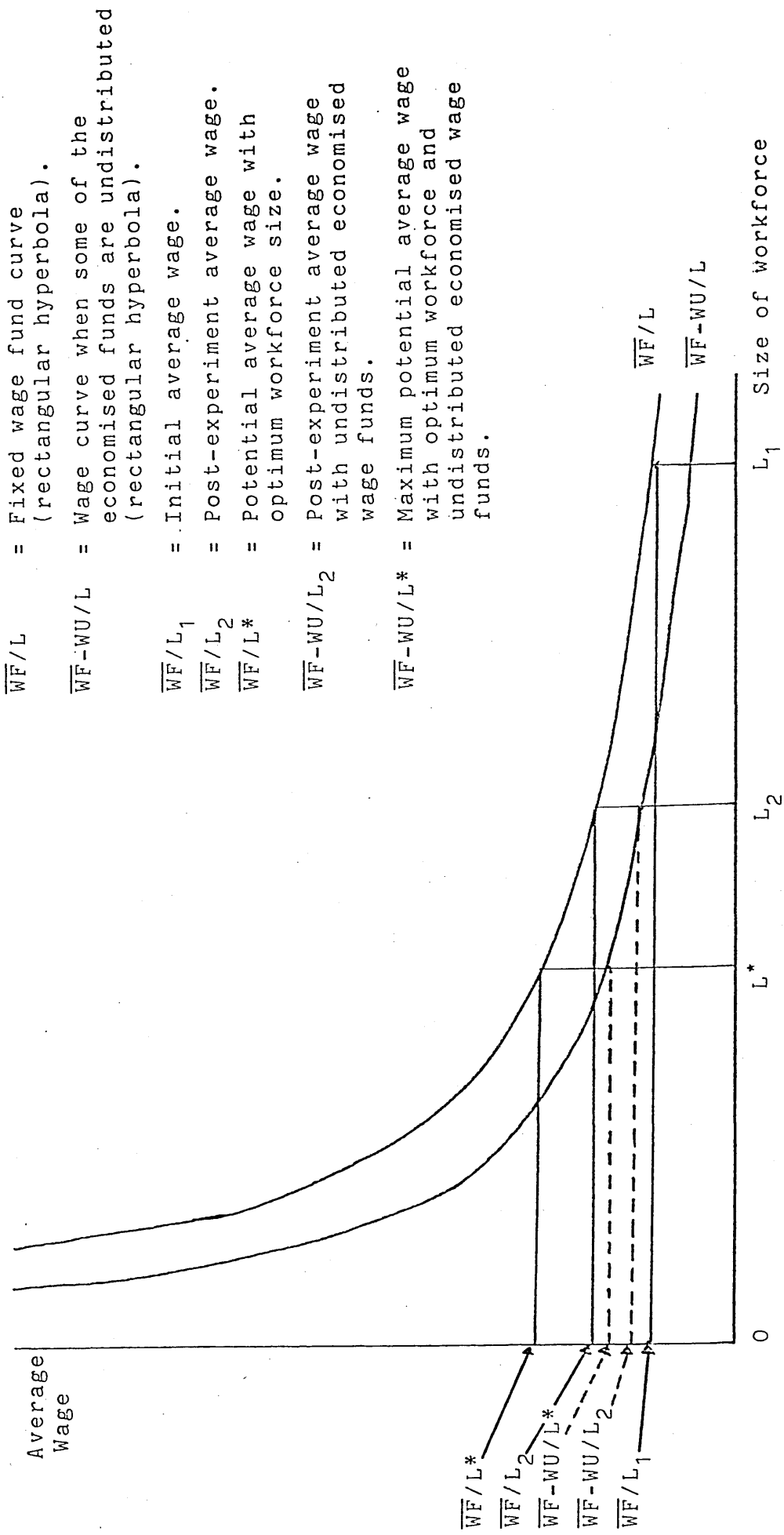
Fourthly, the model of the experiment outlined in section 3 of this chapter, assumed that the whole of the economised wage fund was redistributed. However, this was not the case in practice and for example, at Shchekino throughout 1968, the percentage of the economised wage fund distributed grew slowly and had only reached 39% by the beginning of 1969

(see Table 32). This obviously has a consequence for the potential increase in the average wage, indicated on Figure 7, which will rise less than possible. These retained funds still have an importance for the experiment's operation, particularly if it is used for collective provision of social services or housing at the plant, but not for the individualised reward. The fact that more than half of the economised wage funds were not distributed as individual wage supplements suggests that whatever effect financial changes had they were at least as important on a collective basis.

Fifthly, during this period average wages were rising anyway as a result of state wage policies and the increment from the experiment was not the sole source of bonuses and premiums. Wages were also supplemented from the material incentives fund and the supplements from the experiment were no larger for many categories of workers.

Finally, and perhaps most importantly, even if wage increments were received the perennial problem of consumer goods and services minimises the potential incentive effects of the experiment. If money does not function as the universal equivalent and cannot provide unambiguous access to the desired, good quality consumer items then its motivational impact will be limited. There is no evidence that any additional allocation of consumer goods occurred to ease the implementation of the experiment. In terms of the model it is suggested that the curve relating wage

Figure 7



increases to increases in work intensity and labour productivity is relatively steep. One possible consequence of these circumstances is that prices in the private peasant market may well have risen as the price of the commodities traded there will be sensitive to forces of supply and demand. However, it is impossible to provide any evidence, one way or another regarding this.

Therefore, the wage increases were small, received by few and their impact weak. Nevertheless, productivity and output did rise impressively and this raises the question, what caused these impressive economic results?

I would argue that the initial success of the Shchekino experiment cannot be explained solely by the increased material incentives introduced. These new economic stimuli were subordinate in their effect to a heightened use of more traditional bureaucratic forms of control coupled with the newly acquired ingredient of increasing worker insecurity. This is particularly true in the initial phase of the experiment when the workforce is at its largest and the possibility of being released is at its greatest. In this period the internal reorganisation of the production and labour process was carried out by the internal commissions detailed in Table 24. Their role was to identify internal reserves and eliminate them, rationalise production, repair and services and press for the introduction of norms or raise existing norms. The internal

commissions, supported by management and the external institutes will put the plant's labour practices under the microscope and eliminate slack by the administrative sanctions available to them, i.e. by suggesting dismissals. Labour productivity therefore, will rise in this initial period for a number of reasons.

Firstly, some of the jobs and individuals eliminated will be non-jobs and non-workers. They will not have contributed to production and simply by their presence will have reduced average labour productivity. If these individuals are freed average labour productivity must rise. This particularly will be the case if these workers come from non-productive sectors like service, repair, maintenance and transport, as indeed they did.

Secondly, the emergence of the possibility of release will change both managerial control and the remaining labour force's attitudes and performance. This is clearly indicated in the discipline indicators cited. The reason for this is that harder work at the plant, occupation and workplace that you know is preferable to the uncertainty engendered by change. The hierarchy of uncertainty rises from a change in occupation or workplace, through to a change in plant, to the worst possibility a change in location. This uncertainty is clearly not unemployment, in the same sense as known in the west, but nevertheless, in this initial period it performs a similar function (121). Increasing worker insecurity provides an explanation of

increasing work intensity and labour discipline and accounts for the increase in production even with a smaller workforce.

Worker insecurity is increased not just by releasing surplus workers but also by the reorganisation of production, the raising and introduction of norms and the combination of occupations as all these elements operate against established labour practices and increase the pressure upon the individual worker. This will be further amplified by the use of some proportion of the economised funds for collectively provided social services, housing etc. These funds will be growing and the benefits will only accrue to those remaining at the plant and as they are distributed amongst a smaller workforce the possibilities for access or allocation will improve. This further pressurises the individual worker not to identify himself as an individual who should be released (i.e. an idler, absentee or drunk).

From the point of view of the model it is suggested that the impact of the experiment was achieved by shifting the curve, identifying the relationship between average wages and the average intensity of work, to the right. Even though the curve remains relatively steep, the combined impact of improved labour organisation, increased discipline and reduced worker security yields a greater level of productivity for any given wage level, see Figure 8. This remains the case even if some proportion of the

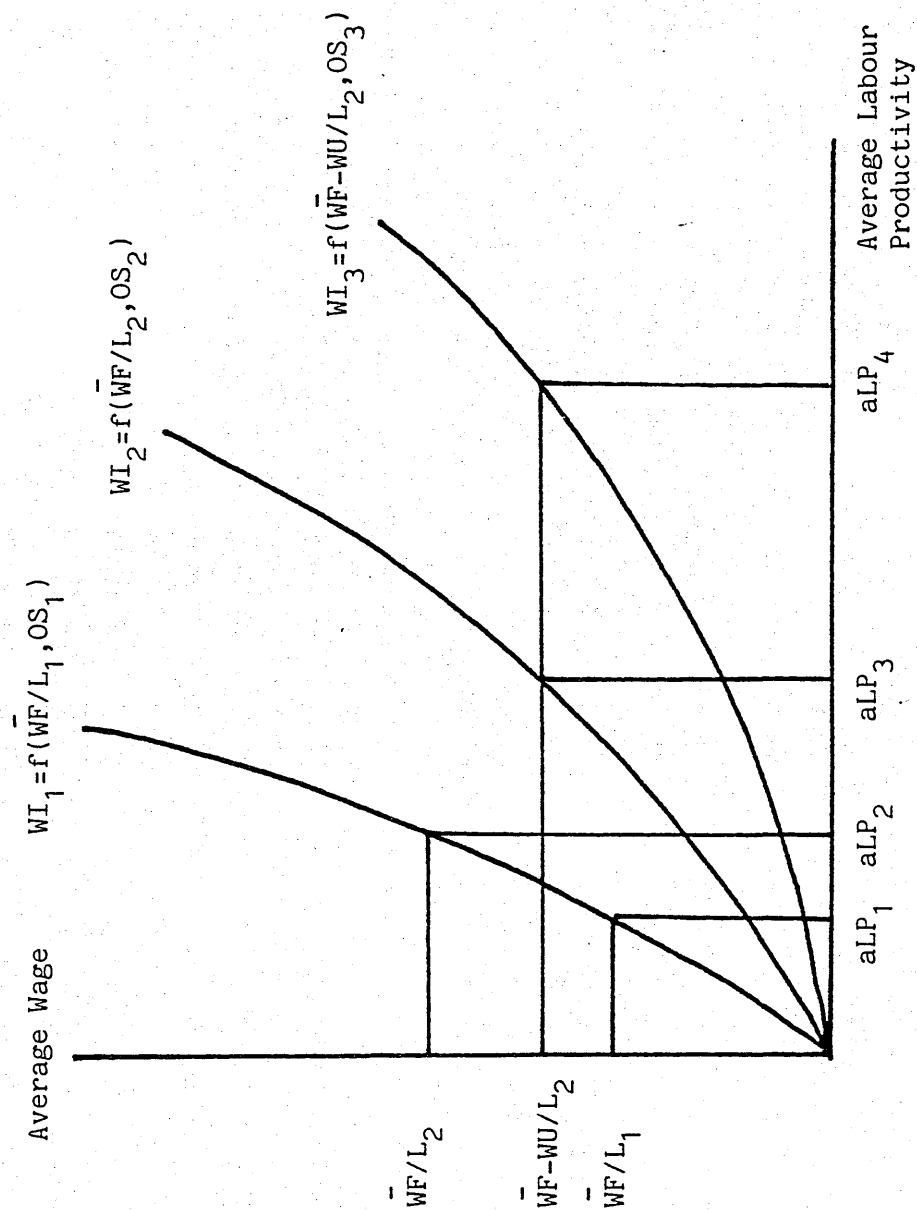
Figure 8

\bar{WF}/L_1 = Original average wage.

\bar{WF}/L_2 = Post experiment average wage. All economised funds distributed.

$\bar{WF}-WU/L_2$ = Post experiment average wage. Some economised funds undistributed.

$aLP_1 - aLP_3 - aLP_4$ = Increasing productivity as worker insecurity increases.



economised wage fund is undistributed. For obvious ideological reasons the notion that increasing worker insecurity contributed to the successes of the experiment has neither been investigated nor given explicit prominence by the Soviet sources.

The argument can be substantiated on two further levels. Firstly, the anecdotal evidence already cited, from Polikarpov and Karpenko, shows some evidence of worker hostility to the experiment. This, and the degree of reluctance to move, even to nearby enterprises, further supports the general point that the experiment increased worker insecurity.

Furthermore, there is evidence from Soviet statistical sources that also supports the general argument. This suggests that there is a strong correlation between increases in labour productivity and the dismissal of workers in other branches (122). It has been suggested for example, that a 1% increase in labour productivity can be achieved by releasing 0.8% of the workforce. Table 38, based upon data from studies of the textile industry, suggests a series of bands linking changes in labour productivity to reductions in manning levels. The limited empirical evidence presented in Table 29, provides some further justification for this argument with productivity increases being more closely correlated to decreasing workforce size than to increases in wage levels (123).

TABLE 38

RELATIONSHIP BETWEEN PRODUCTIVITY INCREASES AND PERCENTAGE OF WORKERS RELEASED.

Rate of Growth of Labour Productivity	% workers Released
30% or more	20%
between 20 and 30%	18%
between 10 and 20%	14%
between 1 and 10%	9%

SOURCE: - Problemy ispol'zovaniya rabochei sily v usloviyakh nauchno - tekhnicheskoi revolyutsii", Moscow, 1973, p.106. Also cited in E. Manevich, "Voprosy Truda v SSSR", Moscow 1980, p.86.

Consequently, what is being suggested is that within the framework of the political economy of the USSR the initial results were achieved by a partial change in the relationship between the worker and management and between the worker and his work, via the medium of increasing insecurity and not solely through material stimuli.

The analysis so far has ignored the question of worker participation, which it is suggested by both western and Soviet sources, contributed to the success of the experiment (124). This argument is more complex than the simple statement suggests and demands a careful interpretation of the idea of participation.

Firstly, any participation could only occur after the decision to undertake the experiment had been made. Participation did not include discussions of the desirability of the experiment with the enterprise workforce having the option of rejecting the experiment. The original guidelines for the experiment, and indeed the later revisions, specify that the enterprise can only be transferred to the experiment if the decision of either the ministry or enterprise management, is ratified by the plant's Trade Union committee. Given the nature of Soviet Trade Unions it can be assumed that once the management and party organs have decided to implement the experiment the ratification of the decision is a formality. As would be expected, there is no mention in the literature of any

enterprise rejecting management's decision.

Secondly, participation in the internal commissions leaves little scope for influence as the designation of the commissions and their remit are pre-determined by management. Furthermore, all the commissions were headed by management representatives and they simply mirror the hierarchical nature of the enterprise (125).

Thirdly, the participation in rationalising labour organisation can be viewed as participation in increasing and refining the worker's own exploitation. As has been suggested the workers did not themselves control the economised portion of the wage fund at the level of the shop, nor did they decide how work was to be combined or redistributed. Their suggestions for rationalisation may have attracted wage supplements but the link was not direct and cannot be viewed as participatory.

Fourthly, following from the above points, the logic of the experiment did not challenge the principle of one-man management nor the hierarchy of relations within the enterprise. The thrust of the experiment was to do the opposite and strengthen this principle both for the foreman and shop chief, at the level of the individual shop and for enterprise management, within the plant as a whole.

As argued already, the influence of the workforce on the experiment was primarily reactive and negative which forced

adaptation within the experiment and made necessary the extensive preparation outlined. Acquiescence was necessary but this can hardly be described as participation.

Soviet writers have also argued that multi-occupations, as a result of the job-combination promoted by the experiment, enhanced worker interest and raised the level of work satisfaction (126). This is a repetition of a curious notion, that by increasing the number of boring monotonous jobs a worker is forced to perform this qualitatively enhances work experience. There is little reason to presume that the transition from one job to two, or three or indeed the rotation between jobs, does more than break monotony rather than essentially enrich work experience (127). There is no necessary transition from quantity to quality.

It has also been claimed that the raising of educational and skill levels, as a result of the experiment's implementation leads to enhanced worker satisfaction (128). These changes are a necessary by-product of the experiment. However, it should be noted that work content does not necessarily change and therefore, its overall impact is open to doubt. There is little reason to presume that a worker who has enhanced his skills or qualifications and is employed at the same job as previously, or, as is more likely, combining previously disparate tasks, is likely to be more satisfied with his work situation. This is particularly the case if the material incentives are less than anticipated and the new element of worker insecurity

is introduced.

The general point is that for the workforce as a whole the experiment's benefits will be tempered by the nature of the work they perform, the new intensity with which it has to be performed and the nature of work in the USSR in a general sense. The experiment did not fundamentally alter either the nature of the specific work nor the general nature of work but simply attempted to raise its intensity. Claims therefore, for its beneficial impact have to be viewed sceptically.

So far the success of the experiment has appeared self-evident from the results provided but this needs to be qualified. The success has been viewed solely in Soviet terms but this also needs to be qualified by international comparison. This is notoriously difficult to accomplish by means of considering finished product and trying to evaluate comparative values of output. However, in the case of Shchekino it can be illustrated in a different manner as one year after the implementation of the experiment equipment was installed that was similar in design to that utilised by both Dutch and Italian Chemical firms. The plans for the new processes stipulated that 278 operatives and technicians were necessary to operate them successfully. However, at Shchekino, even with the beneficial impact of the experiment, the staff level was 806 (129). This again gives some idea of the level of overmanning and the degree of negative control exercised by

the Soviet workforce even after an experiment explicitly designed to reduce this. This does not deny that the experiment's success warranted its generalisation but simply shows that its implementation does not guarantee even an approximation to western manning levels.

Furthermore, the release of workers from Shchekino and the other plants cited, also illustrates another feature of the Soviet labour process and a further problem for the experiment's implementation. The percentage of the existing workforce released varied in the plants cited, from 7% at Chelyabinsk to 17% at Novomosovsk and this can be interpreted in one of a number of ways.

Firstly, it could be argued that this confirms the view advanced in Chapter 2, that the manning level of Soviet plants is the result of a localised trade-off between the wishes of enterprise management and the negative control of the workforce. Pre-experiment economic regulation provides no unambiguous measure of overmanning therefore, the introduction of a standardised experiment exposes the differing degrees of overmanning.

Secondly, it could be argued that the level of overmanning at each plant is broadly similar but the differences in the numbers released are explained by the more or less rigorous application of the experiment. This will be determined by the degree of worker resistance or management's risk aversion, etc.

The point is that either, or a combination of both, of these explanations are equally plausible as there was no standardisation of the experiment nor was the level of overmanning standardised. More importantly the experiment itself provided no mechanism for evaluating with any more precision than previously the level of overmanning. For example, two similar plants could release the same proportion of their original workforce and one could be close to the optimum and the other well away from it dependent upon the original level of overmanning. The implementation of the experiment will move the plant towards the optimum combination but it is impossible to evaluate the precise position.

Furthermore, ironically, the logic of the experiment was that plants were rewarded for their past negative attitudes. Plants that had been most negligent and lax in their past control over manning levels could now implement the experiment, free apparently impressive percentages of their workforce and receive plaudits and rewards as a consequence and still be no more efficient than their previously more stringent counterparts who would receive no benefits but still might be operating more efficiently. The recognition of this contradiction in the logic of the experiment coupled with a desire to adapt the experiment, led to the implementation of a number of attempted variants.

SECTION 6: EARLY VARIANTS OF THE SHCHEKINO EXPERIMENT.

It was recognised soon after the inception of the Shchekino experiment, that while in principle it was generally applicable, in specific circumstances it would need adaptation. One such example is when the experiment is applied to an industrial association. The problem is that associations comprise previously separate industrial enterprises which were amalgamated as part of the organisational reform of industry (130). Within these enterprises, manning levels, labour organisation, labour productivity, work intensity and labour discipline are not necessarily uniform as they are the result of previous unco-ordinated allocations, decisions and practices. As a result, the implementation of the basic Shchekino experiment will have a differentiated effect.

For enterprises that had previously been lax in controlling manning levels etc., the experiment could be implemented with reasonable ease. An impressive percentage of the superfluous workforce could be shed, thus raising average productivity and from the economised portion of the wage fund wage supplements could be paid and average wages would rise. The appearance of increased work intensity could be created while at the same time preserving a significant safety factor.

However, for enterprises which had previously been more

disciplined the implementation of the experiment would be more difficult (131). It would be less easy to shed surplus labour, the economised funds available for material incentives would be smaller and the eventual safety factor retained would be smaller. Within this enterprise work intensity will be greater but rewards smaller and the degree of managerial vulnerability to failure greater, even though it is more efficient than the former enterprise. No mechanism, automatic or otherwise, exists for equalising work intensity nor for providing a dynamic in this direction.

From the point of view of the association, at the end of this process labour will have been freed, to be re-located elsewhere but there is no necessary correspondence between work and rewards across the enterprises in the association. Indeed, if workers are mobile between enterprises the net result may be even more harmful, as workers will tend to move from the more efficient, where labour discipline is tighter and rewards smaller, to the less efficient where discipline is more lax and rewards greater, thus undermining the association's performance and the logic of the experiment. In order to overcome these problems a variant of the Shchekino experiment was implemented, in June 1969, at the Bashkirneftekhimzavody (132). The aim of the experiment was to recognise from the outset the differing levels of capacity utilisation and work intensity at the various enterprises in the association and to reformulate the experiment to give comparable incentives to

all enterprises to improve performance.

Prior to the experiment's introduction the association had had a chequered history. From 1964, growth rates of labour productivity had declined sharply and failed to meet planned targets (133). The reasons for this, explained by the association's director Petrov, are an interesting example of why Soviet management is wary of technological change that upgrades plant, product or processes but that in the short term, worsens economic performance.

In this period the enterprise had introduced improved technology into auxiliary production and introduced new large-scale production lines. Much of this was being introduced into the USSR for the first time and had serious design shortcomings. The overall effect was that labour expenditures actually increased rather than decreased and output failed to expand as the new plant underwent implementation problems that could only be resolved during production. It was against this background, not entirely dissimilar to that at Shchekino, that the experiment was introduced. As Petrov points out, the experiment's introduction, disclosed enormous reserves for increasing labour productivity (134). Once again this underlines the point made previously, that by simply introducing new technology there is no automatic increment in labour productivity or output as new technology and technique is refracted through labour organisation and negative control.

The form of the experiment was essentially similar to the basic Shchekino model; the wage fund was frozen for a number of years (at Bashkir for 3 years only); manning levels were to be reduced by combining jobs and rationalising production and labour organisation; those taking on extra responsibilities received wage supplements up to 30% of their basic wage or salary rate and so on.

The novelty came however, in the system of material stimulation. This recognised the different levels of work intensity in existence across the association and the consequent differing abilities to free workers. For example, Khor'kov cites the possibility of a 13.4% cut in the workforce at the Ufa plant within the association compared with a potential 4% cut at the Novo Ufa enterprise (135). Therefore, in order to go some way towards equalising the incentive effects of the experiment it was decided to centralise 30% of all the economised wage funds, from each enterprise, under the control of the association director.

This was then utilised in the following manner. The individual enterprises would receive a 7% increase in their material incentive funds for each 1% increment in their labour productivity plan. By the same token, if the labour productivity plan was underfulfilled by 1% then the material incentive fund was to be reduced by 7%. These allocations were then subject to a 'normalisation coefficient', that attempted to quantify differences in

work intensity. For example, at the Novo Ufa plant, where work intensity was recognised to be higher than the average already existing, it was harder to mobilise further reserves and the incentive fund rose by 7.5% for each 1% increase in productivity. As a result this enterprise received 6,300R more from the centralised fund than it contributed through economised wages (136). Elsewhere the increment was below 7%. In this way it was intended to provide all enterprises in the association with an equalised incentive to free labour and raise productivity.

The original intention of the experiment was to raise output by 16.6% and labour productivity by 16.4% over the period 1968-1971, thereby achieving indices almost double the average for the rest of the branch. This was to be achieved with 3,224 less workers and with a 13% increase in average wages (137).

In the first six months of the experiment over 1,600 workers were released and this was almost as many as were released in the whole republic as a result of mechanising and automating production (138); the planned productivity increase of 5% was exceeded and it actually rose by 9.4% and output grew by 7.4% (139). From this modest start the experiment accelerated and by 1971, the end of the first phase of the experiment, the volume of production had actually grown by 17.8%, labour productivity had grown by 24.1% and average wages had increased by 17.1% (140).

So the variant appears to have been as successful as the basic experiment but its implementation was not without difficulty. Firstly, as at Shchekino, not all the economised wage funds were utilised. This was due to difficulties experienced in dividing up the economised funds within the individual enterprises. The simple course of action would have been to divide the economised funds equally shop by shop but this 'wage levelling' destroys the logic of the experiment as more diligent workers would not be rewarded. However, if the funds are distributed on a differentiated basis conflicts and resistance arise to the experiment from those who feel unfairly treated and ignored in the process.

Secondly, Petrov cites the example of a shop where the re-organisation was scheduled to take three years, yet it was actually achieved in three months (141). As a consequence the shop's Chief should have received the 30% wage supplement. However, if this had been initiated then his wage would have exceeded the enterprise's Production Chief. Therefore, the logic of the experiment can distort the internal wage structure of the plant and generate internal conflicts to the detriment of production effectiveness. For example in the case cited, if the Shop Chief receives the supplement then it is a clear message to the higher echelons of the plant's management that even if they are not recompensed for taking on additional responsibility, their subordinates will be. If he does not receive the supplement it is a clear message to other shop

chiefs that the experiment will be manipulated to maintain old wage structures and therefore, why bother to press its implementation. Petrov argues that the way around this is that enterprise directors should be given more autonomy in wage determination but this is problematic also (142).

Thirdly, there was the usual problems with external factors. Even though the experiment was successful internally it was constrained by the degree of interdependence between the individual plants and the rest of the economic system. For example, rapid increments in output were useless if the rail network could not provide sufficient tankers to transport the finished product away from the plant. This limited further possibilities for growth in output and productivity as no enterprise is autarchic.

Once again the experiment rather than altering its external environment is subject to its vagaries. The initial successes of this variant do not of themselves prove its long run viability. The question of the long run experience of this variant will be returned to in the next chapter.

A second variant of the experiment was instituted at the Perm Electrical Machinery Plant (143). This variant took the experiment in a different direction by recognising that stable wage funds and plan targets may not in themselves be desirable objectives, if the enterprise is producing a changing assortment of products with ever changing labour

inputs (144). At Perm therefore, the intention was to reduce the wage expenditures per rouble of finished output over a number of years. In 1969 planned wage outlays were 25.6 kopecks per rouble of output and this was to be reduced to 23.6 in 1970, 22.5 in 1971 and 21.3 in 1972. Over this same period the plant pledged to increase output by 46%, instead of the 33.7% stipulated in the plan targets and to reduce the labour force by 1,300, thereby increasing labour productivity by 53% (145). As production increased with a decreasing workforce, even though wage outlays per rouble of output were declining, average wages would rise thus stimulating output and efficiency. From the ruling group's perspective this is desirable as a declining wage cost, with increasing output, implies a growth in the surplus.

In the four years up until 1972, output actually rose by over 58%, labour productivity increased by 53% and average wages rose by almost 21 roubles per month. Inexplicably the experiment was abandoned in 1972, with the explicit agreement of the State Committee on Labour and Wages (146). The beneficial effects of the experiment were soon dissipated and whilst during the course of the four years of the experiment managerial and supervisory staff had been cut by 60, in the next four years their number grew by over 400 (147). Furthermore, without the controlling influence of the experiment the wage outlays per rouble of output began to accelerate.

As well as the usual problems faced by Shchekino-like initiatives, there are two particular problems that may well explain the abandonment of the Perm variant. Firstly, if the wage fund is to be determined in relationship to the value of finished output or the volume of goods sold, which is what is implied in the variant, then it is possible for the enterprise to manipulate its wage fund by changing the nature of the product. The intention was to raise productivity but a similar effect can be achieved by embellishing the product, thereby raising the value of output even though in a physical sense output may not have expanded. Boldyrev cites the example of an enterprise previously making a simple glass switching to produce a glass with a gold rim (148). The same impact could be achieved by manipulating the assortment of output away from low value towards higher value output. As the example below illustrates the net effect would be to raise average wage levels simply by expending more raw materials but not necessarily raising labour productivity nor increasing the volume of use-values.

Secondly, there is the familiar problem of how the wage normative is to be set. If it is developed on the basis of past production and wage levels it simply legitimises past practices and provides no dynamic towards the equalisation of this relationship between different enterprises or different branches.

Original Situation.

Work Force	100 workers
Wage Outlay	10k per R
Output	100,000 x 1R
Wage Fund	10,000R
Average Wage	100R

Intended Outcome.

Cut Workforce to	75 workers
Cut Wage Outlays to	5k per R
Raise Output to	200,000 x 1R
Wage Fund	10,000R
Average Wage	133.3R

Possible Outcome.

Cut Workforce to	75 workers
Cut Wage Outlays to	5k per R
Output	100,000 x 2R
Wage Fund	10,000R
Average Wage	133.3R

A further notable variant was undertaken at the Chelyabinsk metallurgical plant where the experiment was introduced with the usual results and over 200 workers were released in the first few months. However, at this plant the nature of the previous production and labour organisation necessitated changes in the form of wage supplement payments. The experiment was utilised as a supplement to the brigade system of labour organisation and the wage supplements rather than being individualised, were distributed via a "collective piece rate" system. The idea behind this was to encourage a brigade to take on a specific integrated series of tasks and to encourage them to release workers. The net result being wage supplements for those who remained (149).

Dramatic results were also recorded by an extended variant at the Polotsk chemical combine where labour productivity

increased by over 42% in one year (150). Here the aim was not only to produce more output with fewer workers but to increase the effectiveness of all aspects of production (151). This was achieved by simultaneously renovating and reorganising production facilities and rethinking labour organisation. This included extensive use of work study techniques, photographing workers activity, movements, etc (152). Coupled to this was the complete centralisation of the provision of services and wages were tied directly to educational and skill attainments (153). Semin refers to this as the "complex-technical" method which eventually led to a 25-30% reduction in service personnel, significantly improved labour discipline and productivity and eventually led to the release of 500 workers (154). The Polotsk variant really took the Shchekino experiment to its logical conclusion at the enterprise level by effectively reorganising the plant from scratch. The obvious problem is that whilst this may be feasible at one plant its generalisation is much more problematic because of the enormous resource requirements.

The Soviet literature cites a number of other variants and there is a tendency to see each implementation of the experiment as a separate variant (155). This raises a potential problem with the idea of variants. If the experiment is adapted to specific conditions and circumstances conscientiously then it may well be the case, as at Bashkir, that benefits follow. However, the adoption of a variant may well be an attempt by plant management to

create the impression that the experiment has been implemented whilst actually accommodating to the prevailing conditions. This is precisely the type of problem that makes it necessary to establish the experiment in the first instance. If there is no unambiguous mechanism of economic control then all that can exist is administrative attempts to control the surplus extraction process. There is no mechanism for the evaluation of the variants which is not itself open to manipulation. Nevertheless, the variants implemented in this period and cited in this section, were all seen as advances in the dissemination of the experiment. Their longer term performance will be assessed briefly in the next chapter.

FOOTNOTES TO CHAPTER 3.

1. See V.Parfenov and V.Shvetsov, Pravda, 28/3/77, p.2. (Hereafter 1977a)
2. J.Delamotte, "Shchekino: Enterprise Soviet Pilote", Paris, 1973.
3. See in particular, V.Parfenov and V.Shvetsov, op.cit., p.2 and Pravda 29/3/77, p.2. (Hereafter 1977b).
4. Goskomtrud SSSR, Gosplan SSSR, Ministerstvo Finansov SSSR i VTsSPS, "Usloviya dalneishego vnedreniya kompleksnogo metoda sovershenstvovaniya organizatsii truda, material'nogo stimulirovaniya i planirovaniya po opytu Shchekinskogo khimicheskogo kombinata v decyatoi pyatletke", 27/4/77. Reproduced in Ekonomicheskaya Gazeta, No.7, 1977, pp.17-18.
5. Goskomtrud SSSR, Gosplan SSSR, Ministerstvo Finansov SSSR i VTsSPS, "Poryadok primeneniya Shchekinskogo metoda sovershenstvovaniya organizatsii truda material'nogo stimulirovaniya i planirovaniya", reproduced in Sotsialisticheskii Trud, 1978, No.7, pp.9-11 and Ekonomicheskaya Gazeta, No.21, 1978, p.2.
6. See TsK KPSS & Soveta Ministrov SSSR, "Ob ulushenii planirovaniya i usilenii vozdeistviya khozyaistvennogo mekhanizma na povyshenie effektivnosti proizvodstva i kachestva raboty", in "Resheniya partii i pravitel'stva po khozyaistvennym voprosam", Vol.13, 1979-1981, Moscow, 1981, pp.78-119.
7. See for example, A.Nove, "The USSR: The Reform That Never Was", in "The Reforms in the Soviet and East European Economies", Dellin and Gross, (Eds), 1972, p.31; D.A.Dyker, "The Soviet Economy", London, 1976, p.117; K.C.Thalheim, "The Balance Sheet", in "The New Economic Systems of Eastern Europe", London 1975, p.95.
8. W.Brus, "The Market in a Socialist Economy", London, 1972, pp.71-75.
9. L.Von Mises, "Economic Calculation in the Socialist Commonwealth", in "Collectivist Economic Planning", London, 1935, pp.127-130 and "Socialism: An Economic and Sociological Analysis", London, 1969, pp.211-220. F.Von Hayek, "The Present State of the Debate", in "Collectivist Economic Planning", op.cit., pp.237-243.
10. P.Wiles, "Economic Institutions Compared", London, 1977, pp.545, 560. Wiles argued that the party's influence in labour markets would eventually undermine the operation of the experiment.
11. In discussion at the SER conference a leading intellectual member of the British Communist Party

explained to me that the introduction of the Shchekino reforms had no more significance for the political economy of the USSR than the introduction of computers. The implication of this statement is that technology is "neutral" and the Shchekino experiment can be treated, not as a significant experiment in work organisation, but simply as a minor technical change.

12. Wei Chi, "The Soviet Union Under the New Tsars", Peking, 1978, pp.7-8.

13. "Fundamentals of Political Economy", G.C.Wang (Ed), White Plains, 1977, pp.205-207.

14. P.Binns and M.Haynes, op.cit., pp.43-44.

15. Delamotte, op.cit., pp.110-114.

16. See J.Storey, op.cit., pp.133-141 for a survey of these initiatives.

17. Ibid., p.139. Storey attributes part of the motivation for autonomous (or quasi-autonomous) work groups to the company's desire to either stave off or limit the impact of unionisation.

18. I.G.Shilin, "Effektivnost' proizvodstva i material'noe stimulirovanie", Moscow 1969, p.5. Labour productivity growth of 5% in 1966, 7% in 1967 and 5% in 1968, appears respectable by contemporary standards. See Tables 15 and 16.

19. Ibid., p.6. The ratio between basic and auxiliary workers in the Soviet machine building industry cited by Shilin was 1:1.2 whilst in the USA the comparable ratio was 3.5:1. Shilin cites an example concerning imported plant which highlights this problem. The foreign firm, from whom the plant was acquired, employed 1,100 workers whilst in the USSR the planned number rose to 1,860. When auxiliary workers were included the total rose to 2,450. (p.8).

20. Ibid., p.8. By 1970 92% of the able-bodied population were employed in the socialised economy (p.7), and little possibility was seen for the further employment of second members of households.

21. See Shilin, op.cit., pp.12-13; Delamotte, op.cit., pp.107-110.

22. Delamotte, op.cit., p.108.

23. See Section 4 of Chapter 2.

24. For the continued importance of the Chemical Industry for the production of fertilisers in the mid-seventies see, A.Kozlov, "Khimicheskaya promyshlennost' - sel'skomy khozyaistvy", Planovoe Khozyaistvo, 1976, No.7, pp.20-21 and N.Borchenko, "Khimizatsiya - vazhneishii faktor

intensifikatsii sel'skogo khozyaistvo", Planovoe Khozyaistvo, 1976, No.9, p.28, who points out that 50% of the growth in chemical output in the early seventies was accounted for by increasing output of chemical fertilisers. For a discussion of the significance of economic reform for the chemical industry see L.Kostandov, "Khimicheskaya promyshlennosti i perspektivy ee razvitiya", Planovoe Khozyaistvo, 1974, No.3, pp.19-20.

25. For a comprehensive western account of technology transfer to the Soviet chemical industry see V.Sobeslavsky and P.Beazley, "The Transfer of Technology to Socialist Countries", Cambridge, Mass., 1980, especially Part II.

26. See Shilin, op.cit., pp.11-12; Delamotte, op.cit., pp.114-115.

27. Ya.Tolstikov, Sovetskaya Estonia, 18/9/68, p.2.

28. Ibid., p.2.

29. Shilin, op.cit., p.20. For a brief outline of the experiment see also, "Upravlenie narodnym khozyaistvom slovar'", Moscow, 1983, pp.186-187.

30. See Chapter 2, Section 3. It is interesting to note that Soviet sources attempt to trace the 'pedigree' of the Shchekino experiment, like most things, back to Lenin. See S.S.Novozhilov, Sotsialisticheskij Trud, 1970, No.5, p.7, who argues that Lenin's desire to see work and rewards linked is a precursor of the principles of the Shchekino experiment. For Lenin's argument see V.I.Lenin, "The Immediate Tasks of the Soviet Government", in "Lenin. Selected Works", Moscow, 1977, pp.412-414.

31. P.Sharov, "Partinaya organizatsiya Shchekinskovo khimkombinata", in "Bor'be za ukrepleniya distsipliny truda i sotsialisticheskovo distsiplina truda: opyt problemy", Moscow, 1975, p.95.

32. Tolstikov, op.cit., p.2.

33. Izvestia, 12/10/69, p.5.

34. Delamotte has pieced together from a variety of sources the approximate number of employees at Shchekino at the start of the experiment and he suggests that the number was between 7,500 and 8000. This means that the original plan was to reduce the workforce by between 12.5% and 13.5%. This corresponds to the estimates of Manevich, Myasnikov and others, who suggest that the level of overmanning in Soviet industry at this period was between 10% and 15%. Furthermore, Delamotte's estimate is confirmed by a later source, Fil'ev, who notes that over the whole period of the experiment 1,814 workers were released or 23% of the workforce. This would put the initial workforce at 7,800. It is not clear if Fil'ev's estimate includes management therefore, an assumption of a total complement of 8,000 is

not unreasonable. It is worth pointing out that auxiliary workers accounted for almost 80% of this total. See Delamotte, op.cit., p.154.

35. Ibid., p.105.

36. See Chapter 2, Section 3.

37. Sharov, (1975), op.cit., p.96; Shilin, op.cit., p.19.

38. Shilin, op.cit., p.24.

39. V.Parfenov, Pravda, 30/6/73, p.2.

40. I.Karpenko, Izvestia, 28/6/69, p.2 (Hereafter 1969a); V.Parfenov, op.cit., p.2.

41. P.Sharov, Pravda, 12/10/69, p.2.

42. Karpenko, (1973), op.cit., p.2.

43. Tolstikov, op.cit., p.2.

44. Ibid., p.2.

45. I.Karpenko, Izvestia, 1/7/69, p.3. (Hereafter 1969b).

46. K.K.Cherednichenko and I.I.Gol'din, "Shchekinskii Metod", Moscow, 1978, p.14; N.Antonov, Pravda, 29/1/70, p.1.

47. Shilin, op.cit., p.28.

48. See Chapter 2, Section 4. Shilin cites the figure of 3.5 million in the repair sector of Soviet industry in 1965. By the early seventies the figure quoted by Sonin is 2.5 million, with 2 million loaders and 1 million quality control inspectors. See Sonin, op.cit., p.5. This explains the potential importance of the experiment in this one area. Manevich indicates the international comparative aspect of overmanning in one part of the auxiliary sector, internal enterprise transport. In the USA for each transport worker there was 25-26 basic workers, in the USSR in the late sixties the comparable ratio was 1:3. See E.Manevich, "Problemy proizvodstva rabochei sily i puti ulusheniya ispol'zovaniya trudovykh resursov v SSSR", Voprosy Ekonomiki, 1969, No.10, p.3.

49. Tolstikov, op.cit., p.2; Shilin, op.cit., p.29; Karpenko, (1969a), op.cit., p.2.

50. Sharov, (1969), op.cit., p.2.

51. See Chapter 2, Section 3. Baranenkova argues that improved management is the major gain of the experiment. See T.Baranenkova, "Ekonomicheskie voprosy vysvobozhdeniya rabochei sily i uluchsheniya ee ispol'zovaniya v novykh usloviyakh planirovaniya i ekonomicheskogo stimulirovaniya", in "Osnovnye problemy ratsional'nogo

ispol'zovaniya trudovykh resursov v SSSR", E.Manevich (Ed), Moscow, 1971, p.243.

52. Izvestia, 12/10/69, p.5.

53. Sharov, (1975), op.cit., p.95; Shilin, op.cit., pp.35-36.

54. S.I.Shkurko, "Po primeru Shchekinskovo khimicheskovo kombinata, (stimulirovanie rosta proizvoditel'nosti truda)", Moscow, 1971, pp.44-45. (Hereafter 1971a)

55. Karpenko, (1969b), op.cit., p.1.

56. In a sense this removes an area of discretion available to management alone as it is now decided by the relevant internal commission. On this type of activity see, V.Andrle, "Managerial Power in the Soviet Union", London, 1976, pp.80-81.

57. Tolstikov, op.cit., p.2..

58. Sharov, (1969), op.cit., p.2.

59. See Shilin, op.cit., p.139, of the first 636 workers who received payments from the Directors centralised fund 500 were maintenance workers.

60. Sharov, (1969), op.cit., p.2.

61. Pravda, 9/10/69, p.1.

62. Shilin, op.cit., p.33; Karpenko, (1969a), op.cit., p.2.

63. This point is confirmed by T.Baranenkova, "Tekhnicheskii progress i dvizhenie kadrov v promyshlennosti", Voprosy Ekonomiki, 1970, No.2, p.56.

64. Ekonomicheskaya Gazeta, No.28, 1971, p.8.

65. Sharov, (1969), op.cit., p.2. See also N.Antonov, op.cit., p.1.

66. Ibid., p.1.

67. Boldyrev, op.cit., p.2. Parfenov gives a slightly lower figure of 135.7% for this period, op.cit., p.2.

68. Cherednichenko and Gol'din, (1978), op.cit., p.14.

69. Shilin, op.cit., p.34.

70. See Shilin, op.cit., p.9; Shkurko, (1971a), op.cit., pp.8-11; Baranenkova, op.cit., pp.50-51.

71. Shkurko, (1971a), op.cit., p.5.

72. Ibid., p.13.
73. Ekonomicheskaya Gazeta, 1970, No.17, p.15.
74. Ekonomicheskaya Gazeta, 1970, No.10, p.11.
75. S.Shkurko, "Voprosy stimulirovaniya proizvoditel'nosti truda", Planovoe Khozyaistvo, 1971, No.8, pp.10-11. (Hereafter 1971b)
76. Shkurko, (1971a), op.cit., p.46.
77. The problem of a lack of correspondence between work and rewards has already been noted in Chapter 2, Section 2 and the problems of 'wage levelling' will be considered in more detail in Chapter 5.
78. See Parfenov and Shvetsov, op.cit., p.2; Shilin, op.cit., pp.52-53.
79. Sharov, op.cit., p.2. The average skill level of those leaving the plant, in 95% of the shops cited by Shilin, op.cit., p.58, was lower than those remaining.
80. "Problemy ispol'zovaniye rabochei sily v usloviyakh nauchno-tehnicheskoi revolyutsii", Moscow, 1973, p.110.
81. Sharov, op.cit., p.2.
82. See Karpenko, (1969b), op.cit; Tolstikov, op.cit; Sharov, (1975), op.cit, p.94; Shkurko, (1971a), op.cit., p.13.
83. Baranenkova, op.cit., p.60.
84. Shkurko, (1971a), op.cit., p.13. It should be noted that at Shchekino the pre-experiment level of overtime working was 10,500 hours per annum. After the implementation of the experiment, reflecting its impact on labour discipline and organisation the volume of hours fell to 340 per annum. See Sharov, (1975), op.cit., p.99.
85. Ibid., p.13. Shkurko also points out that the acceptance of 'technically validated' norms by the workforce also accompanied the introduction of the experiment at other plants. At Omsk the proportion working to these norms rose to 88% of the workforce and at Kuibyshev to 85%. Ibid., pp.37-38.
86. Karpenko, (1969b), op.cit., p.3.
87. Ibid., p.3.
88. Sharov, op.cit., p.2.
89. Baranenkova, op.cit., p.54.
90. Ibid., p.55.

91. Shkurko, (1971a), op.cit., p.15.
92. Ekonomicheskaya Gazeta, 1970, No.13, p.8.
93. Problemy izpol'zovaniye, op.cit., p.111.
94. Ibid., p.111.
95. See Sharov, (1975), op.cit., p.99 and Parfenov, op.cit., p.2.
96. See "Ob opyte raboty partinogo Komiteta Shchekinskogo Khimkombinata po mobilizatsii kollektiva trudyashchikhsya na uvelichenie ob'emov proizvodstva za schet rosta proizvoditel'nosti truda", in "Resheniya partii i pravitel'stva po khozyaistvennym voprosam", Vol.10, Moscow, 1970, pp.539-541.
97. Karpenko, (1969a) op.cit., p.2; Tolstikov, op.cit., p.2.
98. Pravda, 9/10/68, p.1.
99. Cited by Karpenko, (1969a), op.cit., p.2.
100. Rather than using the term "bezrobotitsa", unemployment, the Russian verb, "vysvobozhdat'", to free, release or disengage, is continually used in the literature.
101. Karpenko, (1969a), op.cit., p.2.
102. Tolstikov, op.cit., p.2.
103. Karpenko, (1969a), op.cit., p.2.
104. Cited by Karpenko, ibid., p.2.
105. Ibid., p.2.
106. Karpenko, (1969b), op.cit., p.1.
107. Pravda, 9/10/68, p.1.
108. Sharov op.cit., p.2 points out that a permanent department of economists was established at the plant.
109. Karpenko, (1969b), op.cit., p.1.
110. G.Volovich, Izvestia 7/3/73, p.2, cites the example of two plants in Irkutsk. One enterprise introduced the experiment in a formalistic manner with little preparation and failed to gain significant results. However, a nearby plant carefully prepared for the experiment and received favourable results.
111. Tolstikov, op.cit., p.2.

112. Sharov, op.cit., p.2; Karpenko, (1969a), op.cit., p.2.
113. Antonov, op.cit., p.2.
114. Karpenko, (1969b), op.cit., p.1.
115. Shilin, op.cit., pp.35-39; Shkurko, (1971), pp.3,20; Cherednichenko and Gol'din, (1978), op.cit., pp.11-12; 51-60.
116. Shilin, op.cit., pp.42-43.
117. Baranenkova, op.cit., p.54. See also A.Grigor'ev and L.Kheifets, "Ispol'zovanie ekonomii zarabotnoi platy", Planovoe Khozyaistvo, 1970, No.2, p.56.
118. Shilin, op.cit., p.39 estimates the increase at between 10% and 20% for this category of workers. Of the 2,718 workers receiving wage supplements by 1970, 1,740 were repair and maintenance workers. Shilin, op.cit., p.35.
119. Ibid., p.37.
120. Shkurko, (1971a), op.cit., p.45.
121. See Rutland, op.cit., Section 6, who correctly argues that the experiment did not usher in unemployment. He does however, wrongly attribute, to an earlier article of mine, the view that the experiment introduced the spectre of unemployment to control the working class. My argument was that this was the ultimate logic of the development of the experiment. Not that this had been achieved. See R.Arnot, "Soviet Labour Productivity and the Failure of the Shchekino Experiment", Critique No.15, 1981, pp.53-55.
122. "Problemy Ispol'zovaniya", op.cit., p.105.
123. The data in Table 29, yields stronger rank order correlation coefficients when productivity increases are related to changes in workforce size rather than to average wage levels. It is impossible to answer this question unequivocally as the available information is so fragmentary, covering different time periods, expressed in different ways that are incompatible, etc.
124. See the TsK KPSS, Pravda, 9/10/69, p.1; Cherednichenko and Gol'din, (1978), op.cit., pp.18-19. Delamotte, op.cit., pp.106-107;117-118.
125. See Table 24.
126. See Karpenko, (1969b), op.cit, p.1, who claims that job combination has led to "more interesting and meaningful work".Cherednichenko and Gol'din, (1978), op.cit., suggest that job combination will make workers more receptive to changing working conditions. (This is parallel to the western arguments regarding restrictive practices).

127. My personal experience, on the receiving end of such schemes, would lead me to agree with the respondent cited on the back cover of T.Nichols and H.Beynon, "Living With Capitalism", London, 1977.

"You move from one boring, dirty, monotonous job to another..... Somehow you're supposed to come out of it all 'enriched'. But I never feel enriched - I just feel knackered".

At least under capitalism the wages received do give access to consumer goods and services. Whilst it is impossible to come to any unambiguous conclusion about the respective welfare position of the worker under capitalism (with unemployment, insecurity and crisis) and the USSR (with significant job security but shortages) there is no reason to assume that 'job enrichment' has any more meaning in the USSR than it does in the west.

128. See K.K.Cherednichenko and I.I.Gol'din, "Shchekinskii metod: itogi i perspektivy", Sotsialisticheskii Trud, 1976, No.2, p.54.

129. See E.Manevich, "Problemy vosproizvodstva rabochei sily i puti ulushcheniya ispol'zovaniya trudovykh resursov v SSSR", Voprosy Ekonomiki, 1969, No.10, p.34.

130. See A.Gorlin, "Industrial Organisation: The Associations", in "Soviet Economy in a New Perspective", JECCUS, Washington, 1976, pp.162-189.

131. It should be noted that the term efficient is being used in a relative sense as there would probably still exist a degree of labour surplus even after the experiment's successful implementation. (See footnote 129).

132. The Bashkir variant is described by Delamotte, op.cit., pp.194-202. Also see Cherednichenko and Gol'din, (1978), op.cit., pp.22-23.

133. G.Kudryashov, Izvestia, 16/12/69, p.3.

134. Ibid., p.3.

135. V.Khor'kov, "Bashkirskii eksperiment", Sotsialisticheskii Trud, 1969, No.6, p.36.

136. Antonov, op.cit., p.1.

137. Kudryashov, op.cit., p.3.

138. Antonov, op.cit., p.1.

139. Kudryashov, op.cit., p.3.

140. Ya.Gabidulin, Ekonomicheskaya Gazeta, 1975, No.6, pp.6-7.

141. Kudryashov, op.cit., p.3.
142. Ibid., p.3.
143. See Shkurko, (1971a), op.cit., pp.28-31.
144. V.Boldyrev, Pravda, 26/5/69, p.2.
145. Ibid., p.2.
146. V.Selyunin, Sotsialisticheskaya Industriya, 2/3/78, p.2.
147. Ibid., p.2.
148. Boldyrev, op.cit., p.2.
149. Izvestia, 12/10/70, p.5.
150. Latov and L.Gol'din, Ekonomicheskaya Gazeta, 12/9/75, p.10.
151. L.Kostandov, Izvestia, 11/12/75, p.3.
152. S.G.Semin, "Novye rezervy Shchekinskogo Metoda", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1976, No.4, p.96.
153. K.K.Cherednichenko and I.I.Gol'din, (1976), op.cit., p.59.
154. Semin, op.cit., p.96.
155. See for example, Trud, 13/7/73, p.2, for details of the Groznenskii variant and Pravda, 19/3/73, p.2 for details of the Kirovskii variant.

CHAPTER 4: THE ATTEMPTED GENERALISATION OF THE SHCHEKINO
EXPERIMENT.

SECTION 1: THE EXTENSION OF THE EXPERIMENT IN THE EARLY
YEARS.

The problems involved with the initial implementation of the experiment may well have proved difficult but they were not insurmountable, as the experience at Shchekino and elsewhere indicates. This may be attributed partially to the fact that with any such experiment or prestige project, there is the potential for a great deal of kudos to be attached to the individuals involved with its successful implementation and therefore, special efforts will be made by the relevant ministries, local party organs and especially plant management, to guarantee its initial localised success (1). However, it must also be recognised that the experiment's initial successes, particularly at a range of enterprises in different Ministries and Regions, cannot be simply explained as the result of "hot house" conditions. Soviet sources explicitly deny that the success of the experiment was created by the provision of an unusually favourable environment or the provision of special allocations of resources (2). However, the plants experiencing initial successes were similar. They were characterised by having a combination of existing labour shortages, reflected in considerable in-plant vacancies, coupled with the need for a growing workforce, either

because basic capacity was under-utilised or because it was in the process of expansion or because new facilities were being completed nearby. Without this experiment the new capacity would probably not have been manned (3). This combination made it possible to absorb the majority of released workers in the locality, hence minimising discontent, whilst at the same time providing enterprises with the benefits of increased work intensity and discipline from the now more insecure workforce remaining at the plant.

Furthermore, even if the experiment did not lead to completely comparable manning levels at similar plants, nor to comparable norms for comparable jobs, it did nevertheless, tighten the internal organisation of labour at the plants involved and free some surplus labour. The variants adopted, in this early period were based upon a recognition of the contradictory logic of the experiment in some instances or were adaptations to particular circumstances and were attempts to stimulate the further dissemination and refinement of the experiment. This was essential for the ruling group because, however beneficial the impact on individual plants, if the vicious circle of labour productivity problems outlined in Figure 1 was to be broken, the experiment needed to be generalised to all enterprises. Quite clearly, the implementation problems would be exacerbated if all enterprises attempted to switch to the experiment overnight as preparation time, staff for retraining etc., would be under great pressure, as already

noted (4). Nevertheless, generalisation of the experiment was clearly the ruling group's intention and this was consistent with the logic of the experiment. Furthermore, it was necessary to maintain the momentum of the experiment at the original enterprises, like Shchekino and Bashkir, the aim being sustained change and not simply one-off success.

It could be argued that the results recorded by the Shchekino plant during the 9th Five Year Plan indicated that the momentum was indeed maintained. As Sharov points out,

"In the period 1967-1974 the volume of production grew 2.5 times. In this same period the number of workers fell by 1500, the productivity of labour increased by 3.1 times, average wages rose by 44%, significant gains were made in terms of returns on invested funds and profitability" (5).

By 1975, the volume of production was 34% up on 1970 and labour productivity had risen by 46.6%, achieving the planned increase for the whole plan period in only four years (6). Furthermore, by 1974, in comparison with 1966, losses in labour time due to absenteeism had fallen by 15 times; absence with administrative authorisation had fallen by 13 times; the hours of overtime had been reduced from 10,000 to 340 per annum and 4,254 Shchekino workers had by this time raised their qualifications (7). The rise in educational qualifications was accompanied by a further

increase in the average skill level. However, this general picture of continual advance will be qualified later as it obscures a number of underlying problems.

An analysis of 326 industrial enterprises operating along Shchekino lines further confirms the picture of progress. By 1/11/75 these enterprises had released 47,500 workers, 4.5% of the total they employed, and between January and October 1975 alone, they released almost 15,000 workers (8). These enterprises raised their level of labour productivity by between 15% and 20% over this period (9) and 91.7% of their growth in output was achieved by labour productivity increases in comparison with 80.5% in industry as a whole (10). In these enterprises 22.4% of the released workers were employed in new shops or facilities at the same location, 52.4% filled vacant places at the same plants and 25.2% went to new enterprises (11).

Discipline indicators also improved, as was the norm with the experiment. For example, at Artemovsk (GRES), labour turnover was reduced from 17% in 1973 to 8.7% in 1975 and at the Angarskom petro-chemical plant losses in labour time were reduced to less than 40% of their pre-experiment level (12). Also similar changes occurred in the degree of work combination and for example, at one plant cited, 250 people acquired 4-5 occupations, 550 acquired 3 occupations and 1,518 acquired 2 occupations (13).

However, even if the level of productivity increases were

not as impressive as at the plants that originally implemented the experiment and the scale of the labour released not so large, the general pattern of the experiment was being replicated in this period (14). This also includes the low level of additional payments as a result of the experiment's implementation which were estimated at a monthly average of R13 or 7.8% (15).

Nevertheless, even after its initial successes, the immediate pressure to generalise the experiment and its extension during the 9th Five Year Plan, Soviet commentators have continually complained about the slow generalisation of the experiment (16). The absolute spread of the experiment is detailed in Table 39, which has been compiled from the fragmentary sources available, and this shows the slow rate of dissemination up to 1977. To give some perspective to the figures, the 300 enterprises operating on Shchekino lines in 1972, represented less than 0.5% of the Soviet total (17). Consequently the figure of 1,200 after ten years of the experiment is probably around 3% of the total and represents a rate of transfer of 120 per year or ten per month (18). At this rate, assuming the number of enterprises remains fairly constant, it will take over 300 years for all Soviet enterprises to transfer to the experiment. In fact the majority of the plants that initiated the experiment did so in the early years, even though they may have taken some time to become operational, and by the mid-seventies and the tenth anniversary of the experiment the rate of transfer had slowed appreciably

TABLE 39

THE DISSEMINATION OF THE SHCHEKINO EXPERIMENT.

<u>1/1968</u>	<u>12/1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
8 ¹	22 ²	30 ³	60 ⁴	120 ⁵ /121 ⁶	300 ⁷
<u>1973</u>	<u>1974</u>	<u>1975</u>		<u>10/1977</u>	<u>12/1977</u>
700 ⁸	2% ⁹	3% ¹⁰		1000 ¹¹	1200 ¹²

1. Baranenkova, op. cit, p. 51.
2. Karpenko, op. cit, p.3.
3. Shkurko, op. cit, p.3.
4. Ekonomicheskaya Gazeta, 1970, No. 10, p.11.
5. Shkurko, op. cit, p.3.
6. Planovoe Khozyaistvo, 1971 No. 8, p.10.
7. Boldryev, op. cit, p.2.
8. Sonin & Zhiltsov, EKO, 1974, No. 1, p.126.
9. T. Khachaturov, Planovoe Khozyaistvo, 1974, No. 6. p.12.
10. Aganbegyan, Izvestia, 1/4/75, p.2.
11. Mirgaleev, op. cit, p.105.
12. Pravda, 29/7/78, p.1.

(19).

The slow dissemination of the experiment has been accompanied by a differential diffusion of the experiment between ministries, branches and departments of the economy. For example, during the 9th Five Year Plan, 150 enterprises in the Chemical industry completed the transition to the experiment and freed 55,000 workers (20) but in some branches, notably for example machine tools, civil engineering, road construction and mining, no enterprises or work units had instituted the experiment. Table 40 illustrates the diffusion of the experiment in a number of selected ministries. As noted by Ivanov, this disparity between ministries in applying the experiment can be quite pronounced, as three of the ministries cited in Table 40 have over 40% of their enterprises operating on Shchekino lines whilst Minchertmet, Mintsvetmet and Minenergo only have between 2% and 6% of their enterprises on the experiment (21). Furthermore, he notes the disparity between machine building and light industry. For example, Minkhimmash and Minavtoprom have 10-20% of their enterprises on the experiment whilst Minstankoprom, Minstroidormash, Minpribor and a number of other branches have no more than 2% of their enterprises operating on experimental lines (22).

Furthermore, as can be seen from Table 41, different ministries had differing degrees of success with regard to the number of workers released. The figures in Table 41 should be compared to the percentage of workers freed by

TABLE 40

ENTERPRISES TRANSFERING IN THE SHCHEKINO EXPERIMENT DURING THE 9th FIVE YEAR PLAN.

<u>Ministry</u>	<u>No of Enterprises on Shchekino Experiment</u>	<u>As a Proportion of Total Enterprises in the Branch</u>	<u>No. of Workers in these Enterprises as a % of Total Branch.</u>
Minneftekhimprom	70	30.1	43.1
Minugleprom	6	1.9	0.4
Minkhimprom	150	46.0	70.0
Mintyazhmash	7	6.8	6.4
Minelektrotrekhprom	7	2.4	2.8
Minlesprom	29	3.2	2.6
Minbumprom	100	54.3	70.3
Minpishcheprom	12	0.2	0.6
Glavmikrobioprom	28	41.7	42.8

Source:— S. Ivanov, "Shchekinskii Metod v decyatoi pyatiletke," Sotsialisticheskii Trud, 1977, No 4, p.11.

TABLE 41

PERCENTAGE OF TOTAL WORKFORCE RELEASED BY SELECTED MINISTRIES.

<u>Ministry</u>	<u>% of Total Workforce Released</u>
Mintsvetmet	15.3%
Minkhimprom	10.3%
Minenergo	10.4%
Minneftekhimprom	6.4%
Mincherneta	6%

Sources:-

S. Ivanov, "Shchekinskii Metod v deyatnoi pyatletke," Sotsialisticheskie Trud, 1977, No. 4, p.11; K. Cherednichenko & L. Gol'din, "Shchekinskii Metod," Moscow, 1978, p.15; Shkurko, op. cit, p.119.

the chemical industry, probably the most advanced and successful proponent of the experiment and its variants, where during the course of the experiment an estimated 18% of the original workforce were released (23).

This differential diffusion of the experiment explains the substance of the comments about the experiment by V.Selyunin (24). He argued that it was desirable for the experiment to spread slowly during this period because its implementation had been predominantly in Department 1, producer goods industries. The increase in output and productivity, even though they are well in excess of wage rises and desirable in themselves, had nevertheless, lead to increased wages for workers in Department 1 industries without a comparable impact in Department 2, consumer goods output. Therefore, if the experiment continued to spread in this differentiated manner he saw the possibility of these disproportions generating inflationary pressures (25). His conclusion was that a cautious approach to the experiment was desirable if these problems were to be avoided and therefore, it should be disseminated slowly. Manevich refuted these criticisms and argued that whilst a slowing in the spread of the experiment would indeed reduce these pressures it would not resolve the underlying problems and it was the wrong approach. What was necessary was a more rapid dissemination of the experiment, and its beneficial effects, into Department 2 enterprises and not allow the lack of consumer goods to act as a constraint on the generalisation of the experiment (26). Nevertheless, there

is an undoubted problem here. Increased production of consumer goods is necessary for the incentive effects of the experiment to work. Yet it would appear that the experiment is conforming to the traditional bias in Soviet economic development and further reinforcing the predominance of Department 1 enterprises (27). This can be explained in a preliminary manner, by the traditional pressure and attention on this sector and is another respect in which the experiment simply conformed to previous patterns of Soviet industrial life without radically transforming it.

Some Soviet authors have suggested that the experiment is simply more appropriate for some industries than others (28). However, it should be noted that this argument has little official support, as both Party and State bodies have continuously pressed for the widest possible implementation of the principles of the experiment in all areas of economic life. It was never envisaged for example, that the experiment should only be applied to basic production. It was thought that the problems experienced by the Soviet economy in the transport sector, both with regard to raw materials and finished products, could be resolved if the experiment were to be introduced. Disruptions in the flow of production are often attributed to failures in the transport system and in some sectors, as already noted, production can be halted if the finished product is not expeditiously transported away from the plant (29). Delays are a form of waste and poor transport

facilities or their non-availability especially contributes to agricultural problems. Consequently, the Shchekino experiment was implemented in some transport depots. As Kamzin points out, the role of the experiment was not to release drivers, who tend to be in very short supply, but to encourage job combination and to strengthen work discipline (30). At the depot cited, during 1972, 736 workers were released, primarily from auxiliary and repair sectors, the idle time of trucks was reduced by 11% and productivity rose by 12% (31). The major remaining problem for this unit was not caused by its internal labour organisation but by equipment failures as a result of poor construction and the chronic absence of spare parts (32).

The experiment was also successfully extended to the work of researchers and designers working in research institutes (33). From 1973, the State Chemical Design Institute introduced the experiment and over a three year period freed 92 members of staff (34). This reduced design costs, boosted productivity and raised average wages as the economised wage funds were redistributed among those remaining at the institute. The initial implementation of the experiment was a success showing the application of the principle of the experiment to the work of ITR and members of the intelligentsia. However, the experiment began to falter after three years for reasons similar to those outlined later in this chapter. The general point is that irrespective of the differential dissemination of the experiment its wider applicability was deemed both possible

and desirable.

It should also be noted that during this period the experiment was 'exported' to a number of other East European countries facing similar problems. There are references to similar experiments taking place in both Hungary and Bulgaria. Furthermore, in Czechoslovakia, in 1972, 21 enterprises employing 116,000 workers implemented the experiment with similarly favourable results (35). Great interest was also shown in the experiment by the chemical industries of the GDR and Poland (36). The experiment, with some adaptation, was implemented in a number of plants with the same favourable results. In the GDR chemical industry for example, over a five year period, labour productivity grew by 140% as a result of the more rational labour and production organisation that the experiment introduced. At the "Leina Verke" combine, production rose by 125% and labour productivity grew by 128%, as a result of reducing the workforce (37). In Poland the experiment, coupled with the introduction of the brigade form of labour organisation and "NOT" measures, has been further developed (38). Cherednichenko and Gol'din argue that the success of the Shchekino experiment both in the USSR and elsewhere, shows graphically its utility in dealing with real socio-economic tasks, particularly in a time of rapid technological change when it is necessary to redeploy workers and tighten labour organisation. This conclusion however, raises a number of questions.

SECTION 2: SOVIET CRITICISMS OF THE SHCHEKINO EXPERIMENT.

Given the dramatic initial successes of the experiment, the success of the variants adopted, its partial extension to a variety of branches and regions and the virtual absence of any fundamental criticism of its underlying logic why should the generalisation of the experiment have been so slow and uneven and why wasn't the whole of Soviet industry radically transformed?

I would argue that the answers to these questions shed light on the socio-economic nature of the USSR; allow an assessment of the viability of other market-orientated reform initiatives and illustrate the vacuity of considering the USSR as any variant of capitalism.

The slow dissemination of the experiment cannot be explained by indifference or reluctance on the part of the ruling group. The analysis outlined in Chapter 2 suggests that they above all, had a vested interest in the successful generalisation of the experiment. The disciplining effects upon both management and workers, the shake-out of labour and enhanced productivity and output, would all contribute to a sustainable increase in the surplus and would eventually lead to a way out of the vicious circle of problems identified in Figure 1. In an immediate sense the release of workers would ease manpower shortages. Brezhnev for example, noted at the 25th Congress

of the CPSU that,

"the major problem is labour resources, there are no possible further additions to the workforce and growth can only come through raising labour productivityincreasing the efficiency of social production" (39).

The Central Committee of the CPSU had earlier charged all Party, Trade Union, Republican and social organisations (e.g. Komsomol) to search out all reserves for growth in labour productivity and to raise production with fewer numbers (40). The impact of the Shchekino experiment in this endeavour was explicitly praised at the 24th Congress of the CPSU (41) and the 25th Congress brought further pressure to bear for a strengthening and extension of the experiment, particularly to branches where it had not been implemented previously (42). Brezhnev repeatedly expressed support for the experiment but complained about its slow generalisation (43).

The ruling group's lack of control over the process of surplus extraction made the experiment necessary but this same lack of control leads to a qualification of the experiment's expected impact. Its slow dissemination is evidence of the ruling group's inability to assert control over the labour process. The failure of the ruling group to generalise the Shchekino experiment, almost immediately after calling for this, undermines the naive view that sees

the USSR as a completely totalitarian, socio-economic system. The centralisation of economic decision making is a function not of total control, but the reverse. It is the lack of a reliable unambiguous form of economic control that necessitates the centralisation of decisions and simultaneously undermines the possibility of those decisions being put into practice. Directives from the centre do not become immediate reality but are contested, both between enterprise management and the centre, and between workers and enterprise management. The end result reflects the balance of that conflict not the immediate wishes of the ruling group, which are qualified in the process. Equally, the non-generalisation of the experiment undermines the idea that the USSR is socially homogenous, harmoniously developing in a contradiction-free, planned manner (44). How is this experience to be explained and what are the real forms of the contradictions it reflects?

Perhaps the most appropriate starting point is to consider the Soviet criticisms, which largely, though not exclusively, concentrate on the failure to generalise the experiment. These criticisms emerge in the literature in the early 1970s and reach a peak in the period 1976-1977.

Although there was very little fundamental criticism of the experiment's methodology or intention, some misgivings did arise in the early years. Shkurko for example, whilst praising the achievements at Shchekino and elsewhere, noted that at a number of plants it was unfortunate that the

productivity increases could only be achieved by displacing workers and producing the same level of output (45). He argued that it would be more desirable and efficient if Soviet industrial enterprises could stimulate their existing workforce to produce more. This would avoid the costly disruptions involved in retraining and worker movement between plants. Implicit in this argument is the view that localised successes or even the partial generalisation of the experiment is inadequate. This is particularly the case if the released workers are simply reabsorbed in other enterprises and work as inefficiently as they had previously. The net effect of the experiment could in fact be negative if the gains at the enterprise undertaking the experiment were offset by productivity losses elsewhere. In fact, as a large proportion of the released workers were simply reintegrated into their present workplace this problem could be reduced. However, there is a complementary problem in that the experiment could degenerate into a formalistic exercise involving the shuffling of workers about the plant with little overall positive impact.

Further early criticisms that emerged, pointed out the occasional contradictions between the terms of the experiment and the broader planning system. For example, as a number of authors pointed out, the determination of the enterprise material incentive fund, on the basis of the absolute size of the workforce is a clear contradiction of the basic Shchekino principles (46). Similarly, calculating

managerial and administrative salaries on the basis of workforce size will militate against the adoption of the experiment and will prove counter-productive (47). Soviet sources point out that in the past it may well have been the case that extensive development of the economy led to a correspondence between a large workforce, the scale of output and managerial responsibilities thus explaining the rationale for this form of wage calculation. However, in modern conditions this correspondence is broken as increasing mechanisation and automation (and the desire to extend their impact) ruptures the link between workforce size and managerial responsibility. This renders this form of salary calculation obsolete. This is particularly the case if the Shchekino experiment has been successfully implemented. The reduction in workforce size could lead to the downgrading of the enterprise and a consequent reduction in managerial salaries.

These problems are the inevitable consequence of grafting experimental initiatives onto the bureaucratic complexities of the Soviet planning process. Over time administrative changes were made in a fragmentary manner which overcame these contradictions. However, the possibility of problems like these often arose as initiatives in one area, set up principles which contradicted practices in another. An example of this is the 1973 wage reform (48), which will be dealt with later in this section.

Other early criticisms of the experiment centre on its operation and particularly the size of the material incentives offered. Baranenkova argues that the incentive is too small and Khachaturov criticises the financial authorities for being too cautious (49). These criticisms, which are the direct opposite of the comments cited from Selyunin (50), are not criticisms of the experiment per se but are a plea to strengthen its operation. The effect they hope for, is that enhanced salaries and bonuses would ease the acceptance of the experiment, strengthen its operation and that as a consequence this would stimulate its dissemination.

It is the question of the generalisation of the experiment that attracted most comment and criticism. As early as January 1970, at a seminar on the experiment held in Tula involving State, Ministry, Party and enterprise officials, complaints were raised that the experiment was spreading too slowly (51). Participants at the seminar agreed that the hasty administrative imposition of the experiment was counter-productive and stressed the need for proper preparation prior to implementation. Parfenov suggested that one of the problems in extending the experiment was that some enterprises had oversimplified its methodology and saw it simply as a means to remove unwanted staff. As they had failed to implement all the elements of the experiment it had little overall impact on output or productivity as a consequence (52). The press reports also suggest that many enterprises were willing to implement the

experiment but the extension was not taking place. The reason for this was that even when the preparation was conscientiously undertaken there was no guarantee that the enterprise would actually be allowed to implement the experiment (53). Obviously enterprises would be unwilling to undertake the expensive and time-consuming work involved if no such guarantee existed. The seminar participants called for closer co-ordination between the ministries and their enterprises and the State Committee on Labour and Wages to overcome this problem. This is the earliest manifestation of a recurrent problem that dogged the experiment. That is who exactly is responsible for the decision to implement the experiment? At Shchekino itself, the decision was clearly taken by the enterprise at the behest of the ministry. The Central Committee resolution of October 9th 1969, is ambiguous on this issue. It charges ministries to draw up plans for the implementation of the experiment and calls for party organisations to propagandise for its generalisation, but it does not specify actual responsibility (54). In the 1971 regulations governing the experiment's implementation, every enterprise is given the right to transfer to the experiment but only if it has the support of its ministry and the agreement of the Trade Union Committee (55).

What this means is that the experiment can only be implemented with conscious ministerial support and enterprise autonomy is heavily circumscribed because without the specification of a stable plan and wage fund

the experiment will be undermined. Aganbegyan is particularly critical of the failure to give enterprises real autonomy in implementing the experiment (56). However, this works both ways because any ministry wishing to see the experiment implemented in a particular enterprise would find it impossible to impose it and is therefore, reliant upon enterprise acceptance of the experiment. For the experiment to be successful both enterprise and ministry have to be actively supportative of each other. The possibility that one or the other may perceive the experiment not to be in their interest is a powerful reason for the slow generalisation. This will be taken up in more detail later in this chapter.

In Novozhilov's report to the Tula seminar he argued that a contributory reason for the non-generalisation of the experiment is that the logic of its operation has been inadequately theorised (57). His argument is echoed by Boldyrev who claimed that although Soviet economists were well able to collect empirical data for a number of years and then cautiously advance on the basis of this, they were unable to theorise and generalise the implications of the experiment (58). Parfenov goes even further and indicts not only economists but also sociologists, industrial psychologists and planning specialists who have failed to analyse the experiment and thereby aid its generalisation (59).

As a consequence of these failings Novozhilov points out

that perhaps the terms of the experiment are too static. For example, an enterprise irrespective of its current state of labour organisation and production discipline receives all the economised wage fund to dispose of in the form of wage supplements or for collective consumption purposes. This leads to the disparity already noted between 'advanced' and 'backward' collectives (60). The Bashkir variant addresses this problem when the enterprises were amalgamated in an industrial association but in other cases this constitutes a further blockage in the dissemination of the experiment. The advanced collective by virtue of its past performance and by definition, would be the most likely to take up new initiatives but will gain little from the implementation of the experiment. The backward collective, again by definition and past performance, will be unlikely to be innovatory, even though potentially it has most to gain. As one type of enterprise has little to gain and the other is unlikely to implement it, the experiment will falter.

Boldyrev noted two further related problems (61). Firstly, the implementation of the experiment in the early seventies was predicated upon pledges for increased production. This general principle reflects the 'resultism' common to many areas of Soviet planning (62) and disregards whether increased production is either necessary or desirable. For example, it may generate disproportions if the product is an intermediate element in a complex chain of production.

He suggested that perhaps enhanced quality or reliability would be a more useful basis for the experiment. Secondly, Boldyrev noted that the slow dissemination of the experiment may well be explained by the fact that its general thrust puts management into a potentially embarrassing position. During the process of plan compilation management negotiate with the relevant ministry on the basis of scarcity of resources, particularly labour. Yet they are now supposed to shed labour and take on increased tasks. Management will be wary of exposing their hoarded reserves, laying themselves open to criticism and hence the experiment's spread will be retarded.

A further general problem for many enterprises, noted by Parfenov is the lack of clarity in the instructions for the implementation of the experiment (63). Contradictions in the instructions either stop enterprises from adopting the experiment or simply dampen their enthusiasm, hence slowing its generalisation. Furthermore, Parfenov noted another contradiction in the instructions (64). He pointed out that the instructions contain the warning that any wage supplements introduced, can later be withdrawn if the work for which they are granted is changed by either technological improvements or renovation of existing capital stock. This implies that the benefits for the collective are potentially short term and may be removed later as investment decisions are taken elsewhere, outside of their control. For Parfenov, this increased uncertainty hinders the broader acceptance of the experiment.

The overall impetus of the experiment was also undermined, as previously noted, by the 1973 wage reform. On the basis of the success of the experiment all enterprises were to be allowed to introduce elements of the financial incentives operating at Shchekino without introducing the full experiment (65). Therefore, with little preparation, no necessary commitment to either increase productivity nor to reorganise labour, the incentive elements of the experiment could be introduced. From the point of view of the enterprise this appears attractive because it avoids the necessity to tackle the workforce and at the same time holds out the prospect of success. The same is true for the ministries. Even those ministries which had been most supportive of the experiment halted its systematic implementation in the hope that they could achieve its intended effect without its full introduction. The resultant slowing of the rate of dissemination of the full experiment (66) and the continued decline in the rate of growth of labour productivity, showed this hope to be ill-founded (67).

All these criticisms emerged from the operation of the experiment or from the failures to generalise the experience. They do not undermine the idea of the experiment and all the authors cited are fundamentally supportive of the extension of the experiment. However, perhaps the best way to explain the failure to generalise the experiment is to consider the experience of the Shchekino plant itself.

SECTION 3: THE EXPERIENCE OF THE SHCHEKINO ENTERPRISE IN THE SEVENTIES

After the initial period of dramatic success the experience of the Shchekino plant throughout the seventies shows the specific problems of maintaining the momentum of the experiment. In two important articles, written around the tenth anniversary of the experiment, it was reported that the Shchekino plant was now one of Tula's lagging enterprises and was unlikely to fulfill its current plan targets (68). The problems the enterprise faced cast further doubts on the coherence of its internal logic and are explicable only in terms of the contradiction between the underlying logic of the experiment and the nature of Soviet planning. This in turn reflects the particular political economy of the USSR. Furthermore, there is a direct link between the problems of maintaining the momentum of the experiment and the problems of extending its operation and the specific experience at Shchekino explains the reluctance on the part of many Soviet enterprise managers to embark on the experiment.

In the first instance the point of the experiment is to take up "slack" within the enterprise by rationally utilising existing resources. In this sense there will be an initial once-and-for-all impact, as surplus labour is shaken out (69). But as Soviet sources note, this cannot account for all the productivity increases achieved nor their continuation over time. It does however, explain the

tendency for productivity increments to occur but at a declining rate and this is implicit in the logic of the experiment, whichever explanation of its functioning is accepted.

For example, if we accept the Soviet view that it is the incentive effect of the experiment which explains its success, then as the workforce is trimmed the potential for further wage increases or for extending the wage supplements to new groups of workers, from the economised wages of those released, is progressively reduced. Furthermore, if it is recognised that money does not function as a universal equivalent in the USSR, even if there is a short term incentive effect this will be dissipated as workers learn over time that increased money wages do not necessarily lead to increased access to use-values (consumer goods, agricultural products, better housing etc).

If however, we accept the argument presented in Chapter 3, Section 5, that the success of the experiment was achieved by increasing workers' insecurity this too will have a diminishing effect over time. In the initial period, when the plant's labour surplus is at its highest, so too will be the possibility of release and consequently the level of insecurity will be at its highest. In this period the salutary effect on labour discipline will be most pronounced and productivity gains will be at their highest. However, as surplus labour is shed the possibility of

release will diminish and the security element will rise again, with a consequent negative impact on productivity gains through increasing work intensity. Therefore, whichever explanation is adopted the result is the same, a tendency for the rate of growth of productivity increases to decline. Table 42, indicates the decline in growth rates that took place at Shchekino over this period (70).

Table 43, compiled from a number of sources, shows the time period over which labour was released from Shchekino. Clearly the major impact was achieved in the initial 27 months of the experiment when over 1,000 workers were released, whilst over the next 8 years only 500 more workers were released. For the period 1977-1980, the anticipated release of workers was thought to be unlikely to exceed 300 (71).

A similar argument, regarding diminishing effectiveness, could be applied to management. Their response to the experiment, once the original "psychological barriers" were overcome was enthusiastic and success, reflected in praise, public acknowledgement and rewards, will foster the experiment's extension. This enthusiasm will be tempered over time, as will be explained in detail below, and will diminish the search for internal reserves and no management will willingly cut their safety factor to zero. The plant will settle into a new routine and implicit in this is a tendency for declining effectiveness, no matter how successful the initial implementation of the experiment.

TABLE 42

THE DECLINING IMPACT OF THE EXPERIMENT AT SHCHEKINO

<u>YEAR</u>	<u>INCREASE IN LABOUR PRODUCTIVITY</u>	<u>INCREASE IN PRODUCTION</u>
1966	100	100
1970	232	201
1975	341	270
1977	386	302

SOURCE: Sotsialisticheskaya Industriya, 12/4/78, p.2.

TABLE 43

NUMBR OF WORKERS RELEASED FROM THE SHCHEKINO PLANT

<u>1/1/68</u> 343 ¹	<u>1/7/68</u> 495 ²	<u>1/9/68</u> 515 ³	<u>1/10/68</u> 520 ⁴	<u>20/11/68</u> 689 ⁵
<u>1/1/69</u> 800 ⁶	<u>1/6/69</u> 853 ⁷	<u>1/7/69</u> 870 ⁸	<u>31/12/69</u> 987 ⁹	<u>1/1/70</u> 1,039 ¹⁰
<u>31/12/70</u> 1,175 ¹¹	<u>1/7/75</u> 1,300 ¹²	<u>31/12/75</u> 1,513 ¹³	<u>1977</u> 1,500 ¹⁴	<u>1978</u> 1,570 ¹⁵

1. Shilin, op. cit, p.37
2. Tolstikov, op. cit, p.2
3. Ibid, p.2
4. Shilin, op. cit, p.33
5. Ibid, p.37
6. Karpenko, op. cit, p.2
7. Slepikh, op. cit, p.2
8. CPSU, op. cit, p.1 & Sharov, op. cit, p.2
9. Shkurko, op. cit, p.12
10. Boldyrev, op. cit, p.2 Cherednichenko & Gol'din
op. cit, p.14
11. Semin, op. cit, p.31.
12. Parfenov op. cit, p.2
13. Cherednichenko & Gol'din, op. cit, p.14
14. Parfenov & Shvetsov, op. cit, p.2
15. Pravda, 26/7/78, p.1

The only way this tendency can be offset is if the plant's output and performance can be improved by the renewal of plant and equipment, the introduction of new technology, the mechanisation of what were previously manual tasks or expansion of plant capacity at the current technological level. The difficulties involved in this course of action for Soviet enterprises have already been noted (72). Nevertheless, this had been the intention for the second phase of the experiment in the period 1970-1975 (73) and prior to the 9th Five Year Plan redevelopment of the Shchekino plant was agreed. On the basis of this the Shchekino workforce agreed to increase labour productivity by 62%, wages were to rise by 23% and a further 9.6% cut in the workforce was to take place (74). However, the familiar problems of the supply and construction sectors of the Soviet economy were compounded by delays at the level of the Chemical ministry, which took two years to approve the plans for the plant's redevelopment. Construction deadlines were consistently missed due to delays in deliveries or complete non-appearance of essential materials (75). Even when work was carried out it was poorly finished or was not completed.

Nevertheless, by even more intensive utilisation of the existing resources, the enterprise managed to slightly overfulfil its targets for the 9th Five Year Plan but was now operating, in its own terms, very near its full capacity (76). The result of this was that in the first year of the 10th Five Year Plan the enterprise failed to

fulfill its planned targets. The specific reason for this was that newly completed plant failed; the modernisation of one key shop was further delayed and finally, when it was opened it shut down after one month. This resulted in wage supplements being withdrawn and the 13th month bonus being reduced (77). In other words the dynamic of the experiment had now come into contact with the usual problems of Soviet industrial life. As long as the success of the experiment was dependent upon the internal search for reserves its momentum could be maintained, but at a declining rate. However, it was now constrained by the external environment it was supposed to revolutionise and its further success was to be determined by the external support it received or more correctly, was denied.

This had serious consequences for the Shchekino plant. The combination of declining success, with the consequent reductions in bonuses and wage supplements, coupled with the increasing pressure to achieve plan targets with a smaller workforce, led to skilled workers and technicians leaving the enterprise. The reduction in bonuses and wages, coupled with increased work intensity, could not be offset by wage supplements, drawn from economies in the wage fund as a result of workers being freed, because the voluntary movement out of the plant simply generated labour shortages. Skilled workers could choose to move to nearby plants with better rewards and potentially less pressure, particularly if these plants were not part of the experiment. If this is the case the initial effects on

labour discipline and work intensity will begin to be nullified as the plant's management strive to retain necessary workers. This is particularly the case if the experiment has not been adopted in all plants in a locality and ironically the experiment's previous positive effect on labour turnover may be reversed. The possible trade-off between increased work intensity and rewards will be broken as workers shift to plants with looser controls over work intensity. So for the individual plant the duration of the experiment will be determined by the degree of under-utilised capacity at the outset and once this is taken up, (as far as the enterprise management see this as desirable), the experiment will falter. Once again it is ironic to note that enterprises with the greatest unutilised capacity will be able to sustain the experiment the longest.

A further problem experienced at Shchekino resulted from the combination of the experiment with other central initiatives. For example, Shchekino began to receive centralised directives for the reduction of management personnel, over and above the changes that the experiment had engendered. This caused particular problems as the enterprise was left with insufficient staff even to evaluate operational data. This will act as an impediment to the further dissemination of the experiment. This problem reflects the administrative nature of the Soviet economic mechanism, where centralised instructions are often arbitrary and incompatible with other initiatives.

The experience at Shchekino during this period also highlights the contradictory relationship that exists between the ministry and enterprise management. It highlights the differences in their aims and the ambiguity that exists concerning the question of responsibility. This relates specifically to the central principles of the experiment.

Firstly, the original cornerstone of the experiment was the provision of a stable wage fund and the right of the enterprise to utilise any economised funds to stimulate productivity growth, plus the right to transfer any unutilised balance from one year to the next. This last element was lost in the early seventies (78). Furthermore at Shchekino in the second phase of the experiment, 1970-75, 4 million roubles were lost from the wage fund (79). As Ivanov points out, in this period the wage fund was 'corrected' on seventeen separate occasions (80). From as early as 1973 onwards the Shchekino enterprise had to plead with the ministry for sufficient funds to pay the wage supplements (81). The dynamic that this developed is clearly identified by Slepykh, who points out that up to 1974 labour productivity had grown by 34% but average wages had only increased by 7%. This is far less than the 23% originally planned and is explained by the continual reductions in the wage fund (82). For Shchekino, this problem reached a peak in 1975, when as a result of the

introduction of new basic wage and salary rates the enterprise had to cancel the payment of wage supplements for 1,700 workers (83).

This occurred at a number of other plants. Mirgaleev points out for example, that the Food Ministry had failed to budget the correct wage fund for a number of plants in the North Caucasus, even though they had reduced staff by 500 in two years (84). As a result of this average wages fell rather than rose as planned. As he further points out, some workers simply do not know their entitlement to wage supplements under the terms of the experiment. A further common phenomenon, cited by Mirgaleev, is the redirection of the economised portion of the wage fund away from the plant making the savings (85). This occurred because the responsible ministry has failed to budget for the wages of workers at newly opened facilities, either at the same site or elsewhere. According to Prokhvatilov, petro-chemical enterprises in the Dnepropetrovsk region suffered this fate and the implementation of the experiment led to no material benefit for the workforce (86).

However limited the real incentive effects of the experiment, no one will willingly work more intensively for less and instability of the wage fund has an effect, not only on the wages of the workforce, but also upon management. This type of instability increases uncertainty, reduces their room for manoeuvre and will deter them from implementing the experiment. The impact of this action is

similar to the situation described in Figure 7. The major difference being that in that instance the economised wage fund was not utilised immediately but held over or used for collective provision. However, at Shchekino and the other plants cited, those funds were taken out of the control of the enterprise. Furthermore, the savings made and subtracted from the wage fund now became the base figure for the next planning period and the wage fund moved downwards on this ratchet principle.

The second central element of the experiment's operation was the provision of stable plan targets for a specified time period after the implementation of the experiment. However, this principle was breached quickly. In the short-run the Shchekino plant had its production plans revised upwards as often as enterprises not operating on the experimental lines (87). The same problem is reported from a number of other plants operating on the experiment (88). Over the longer run, the transition from one plan period to the next, the traditional Soviet planning principle of "planning from the achieved level" or "ratchet planning" re-emerged and was widely criticised. For enterprises on the experiment these instabilities pose a number of related problems as well as acting as a deterrent to enterprises thinking about making the transition to the experiment.

Firstly, unstable plan targets will discourage management, at enterprises already operating on experimental lines,

from identifying further spare capacity. At these enterprises the whole point of the experiment was to reduce the safety factor of hoarded labour by improving labour organisation. However, the degree to which this has been achieved, necessarily reduces the enterprises ability to respond to short-run plan changes, hence increasing the possibility of failure. If plan stability is not maintained then the enterprise management will see no advantage in further extending the experiment and reducing their room for manoeuvre. Furthermore, non-participating enterprises will be deterred if the post-experiment situation is no better, and perhaps even worse, than the pre-experiment period.

This will also apply to ministries who will be reluctant to expose their reserves at the range of enterprises under their control (89). If ministries are compelled repeatedly by planning agencies to increase their output or alter the assortment of production this is easier to achieve if the plants they control are of the "non-Shchekino" type. For those operating on the experiment a change in a single plan indicator necessitates a complete revision of the commitments made in connection with the shift to the experiment and this makes the ministry's life even more complicated. Ministries will be unable to respond to future short-run plan changes if the experiment is extended to all the ministry's enterprises and all slack is eliminated. Therefore, if the ministry anticipates unstable plans, which is the norm, then they have a vested interest in

retarding the spread of the experiment (90).

Secondly, even if short-run plans are stable and capacity utilisation is increased there is still the broader problem of ratchet planning, if targets are raised for subsequent plan periods. The major criticisms here are that the planning system fails to take adequate account of the changes the experiment brings and treats the enterprise in an arbitrary manner. The almost automatic uprating of plans in the pre-experiment period could only be accommodated (and justified) either because of the existence of the safety factor or because of the possibilities of attracting more workers. However, after the implementation of the experiment, by definition, these options do not exist. Therefore, the adoption of a ratchet planning mechanism will deter enterprise management and ministries from extending the experiment.

Thirdly, if new plan targets are predicated upon extensions to existing capacity or upgraded, rennovated plant capacity, which has not been undertaken or has broken down, or is of poor quality and design, then the enterprise will fail as Shchekino did (91).

Figure 9, based upon the model developed in Chapter 3, seeks to illustrate the problems involved from the viewpoint of an individual enterprise.

As the workforce is cut from L1 to L3, productivity is

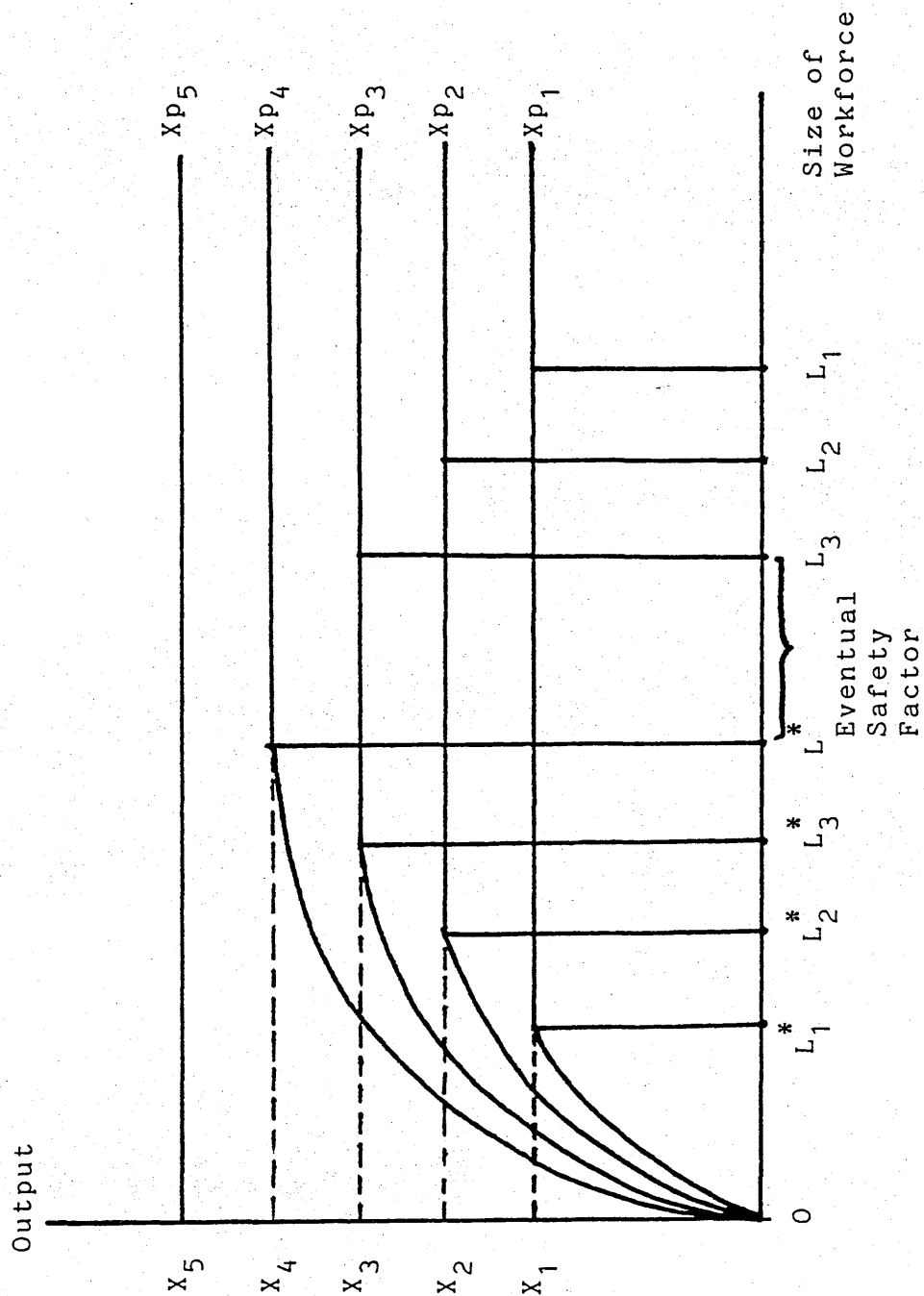
Figure 9

$Xp_1 - Xp_5$ = Planned levels of output on ratchet basis.

X_4 = Maximum technically feasible output.

X_3 = Maximum output
with safety

L^* = Optimum workforce.



stimulated and output rises. The tightening internal organisation of labour shifts the optimal workforce size from L^* towards L^* . If plan targets are shifted upwards on a ratchet principle from X_{p1} to X_{p4} the possibilities of plan fulfillment diminish. We may assume that the maximum technically efficient output, X_4 , with a given capital stock and an unchanging technological level, can never be obtained. This is partially because this level of output is a hypothetical maximum but also because the enterprise management will still maintain some degree of safety factor of hoarded labour. If the safety factor is L^*-L_3 , then any output level in excess of X_3 is unattainable. Furthermore, without technological change or a shift in the overall stock of plant any output above X_4/X_{p4} is also unattainable. What is being suggested is that the continual uprating of planned targets coupled with unstable wage funds will prompt management to re-establish a safety factor thus undermining the experiment's continuation. The combination of the implementation of the experiment and simultaneously the erosion of its basic terms, will ultimately lead to enterprise failure and the reassertion of old planning practices.

Aganbegyan cites the problem of shifting plan targets as the prime reason for the experiment's slow dissemination. In his view enhanced enterprise autonomy is the only way simultaneously to free enterprises from this constraint and to make more rational use of manpower by extending the experiment (92). Ultimately the failure to generalise the

Shchekino experiment is explained by Aganbegyan, as a result of the principle that "initiative is punishable" (93). He argues that eventually the internal search for reserves is hindered by the dependence upon outside agencies and even if a subjective desire for change exists, the necessary objective resources are absent. Aganbegyan points out that enthusiasm for reform initiatives is often "drowned in a sea of paperwork" as increasingly complex instructions are set up to overcome each of a variety of inconsistencies.

It could be argued therefore, that the experience of the Shchekino plant could act as a disincentive to other plants contemplating following their initial example. Perhaps these problems could be overcome if the experiment could be established everywhere simultaneously and this may establish a dynamic that could sweep away the bottlenecks and blockages. As already noted this is impractical, given the form of the experiment, and would cause massive implementational problems at the level of the enterprise.

What is being suggested is that implicit in the logic of the Shchekino experiment, at enterprise level, is a tendency for initial success, which starts at a high point and then continuously declines and eventually leads to plan under-fulfilment. This negative longer-term experience explains the slow generalisation of the experiment. This process raises a number of further questions that will be taken up in the next two sections.

SECTION 4: THE SOVIET RESPONSE TO THE PROBLEMS OF
GENERALISING THE EXPERIMENT.

From the viewpoint of the ruling group the slow dissemination of the experiment was undesirable and attempts were made to reinvigorate its extension (94). In order to be able to do this some idea of the blockage existing was necessary and it is interesting to note that the whole emphasis of their efforts was directed towards the regulations for the implementation of the experiment. This implies that in their view the failures were solely of an administrative or institutional nature. As already noted, ambiguities in the instructions was a concern cited by a number of authors (95).

As a consequence new instructions for the implementation of the experiment were introduced on 27th January, 1977 (96). As Cherednichenko and Gol'din point out, the instructions had undergone a series of changes already and they pick out nine essential elements of the operation of the experiment and show that each of these has been changed between two and four times up to 1977 (97). Therefore, the aim in the 1977 proposals was to remove the impediments to the experiment's implementation and also to provide a stable and rational set of conditions.

The prime problems cited in the introduction to the new instructions were the incomplete adoption of the experiment at enterprise level and the lack of support given to the

experiment by ministries (98). Therefore, the twofold aim was to overcome these problems. The 1977 regulations reaffirmed that the decision to implement the experiment rests primarily with the enterprise and at the same time charges ministries with the responsibility of compiling plans for the further introduction of the experiment. Nevertheless, enterprise autonomy is still constrained in so far as the responsibility for establishing output norms and the level of the wage fund remains with the ministry. In order to stop the claw back of economised wage funds the instructions specify that 50% of any unutilised economised wage funds may be retained by the enterprise. From the point of view of workers the maximum bonus is retained at 30% of the basic wage rate. Major changes were made regarding the payment of bonuses and the evaluation of manning levels prior to and during the experiment and these will be considered below.

It was hoped that these new regulations would stimulate the extension of the experiment and they were seen as an advance in so far as they incorporated some of the previous criticisms made by practitioners of the experiment. However, there were still problems and the new instructions were strongly criticised by a series of Soviet writers, particularly those who had practical experience of the experiment. V.Slepykh for example, pointed out that the new requirement, set up in the 1977 regulations, that labour norms have to be set from branch or interbranch manuals as a necessary pre-condition for the implementation of the

experiment, is theoretically correct. (This is desirable to overcome the problems already referred to with regard to differing initial manning levels in enterprises of the same type in the same ministry). However, as these norms do not exist in many areas it can only slow down the implementation of the experiment (99). As Parfenov and Shvetsov point out, even in the chemical industry, the then current level of norms was only planned to extend to 70% of the workforce by the end of the 10th Five Year Plan (100). Therefore the possibilities of further extension of the experiment were very limited even in this relatively advanced branch. As Selyunin points out, this is almost a reversal of past experience (101). In the past the introduction of the experiment had prompted the acceptance of tighter labour norms. Now however, one of the benefits of the experiment is stipulated as a precondition for its implementation. Slepikh argues that this undesirable state of affairs could be resolved if each enterprise was simply given a projected target size of workforce, without detailed norms. This may be attractive but it begs the question of equalising work intensity and raising the degree of labour utilisation.

Furthermore, Selyunin criticises the new instructions because they introduced a series of new restrictions. As opposed to the previous situation, it was now impossible to raise the wage rate of piece rate workers as a result of the implementation of the experiment (102). This represents a serious impediment particularly in industries where

piece-rate working predominates.

S.Kossoi points out that the new regulations are excessively complex and in some instances contradictory (103). For example, the basic tenet that the enterprise makes the decision to implement the experiment is contradicted in almost every paragraph as no step in either preparation or operation can be undertaken without approval from ministry level. This is either a contradiction or the recipe for continual delays.

As an example of the complexity and possibilities for bureaucratic muddling slowing down the experiment's implementation, Parfenov and Shvetsov cite an interview with the Minister for the Chemical Industry, L.Kostandov (104). It was pointed out to Kostandov that parts of a document produced by his ministry, specifying the conditions under which an enterprise might initiate the experiment, were contradictory. The minister admitted that he did not fully understand the document and that in order to do this it was necessary to consult resolutions from five different years. As the authors point out, at the enterprise level access to these resolutions would be difficult and the time necessary to comply with all the possible restrictions would hinder the experiment's implementation.

As P.Basova argues the main intention of the new instructions is to encourage more plants to switch to the

experiment. But for those enterprises well used to operating upon Shchekino lines, the new regulations fail to say anything on their future development. Basova goes as far as to state that the experiment is at a dead end for these enterprises (105). He argues that because of the ratchet planning principle all the best achievements of the experimental enterprises are now set as their base figures and at the same time the resources available to them are being reduced. He sees this type of arbitrary decision undermining the momentum at enterprises already on the experiment and further discouraging those enterprises thinking of transferring to the experiment.

Mirgaleev, a senior member of the State Committee for Labour, responded to these criticisms, particularly that of Selyunin (106). He argued that the instructions themselves are not the problem but it is the attitudes of both ministries and enterprise management that represents the major obstacle to the wider dissemination of the experiment. He particularly points to the reluctance of ministries to establish comprehensive plans for the introduction of the experiment as a key problem. The successful example of the petro-chemical industry is cited to show how close co-operation between the ministry, its research institutes and enterprises, in the search for more rational labour and production organisation, can ease the experiment's implementation. The reticence of other ministries to introduce such plans is explained as a result of the fact that it is easier to hide inadequacies in

production if the ministry has surplus workers and capacity available. (Just in the same way as it is easier at enterprise level). Mirgaleev notes the need to keep to agreed wage funds but points out that if wage funds are planned annually, based upon current results, there is little incentive for enterprises to reduce their workforce. What is necessary is a longer term perspective providing both stability and incentive. What Mirgaleev is suggesting is that ultimately central planners cannot force ministries to implement the experiment particularly if they do not perceive it to be in their interest.

Denisenko, a planning specialist at Gosplan responded to both Selyunin and Mirgaleev's criticism (107). In a sense his argument returns to earlier criticism particularly that of Shkurko, and he points out that the Shchekino experiment is not applicable to all plants. Productivity could be raised by producing more with the existing workforce but the enterprise would not be eligible for wage supplements under the terms of the existing Shchekino instructions because no part of the labour force has been freed. He points out that in the 10th Five Year Plan period, very few enterprises would be in a position to shed workers and he cites the Kharkov Tractor Association as a typical example. Here the plan provides for a 53% increase in output and a 50% increase in labour productivity, with no personnel reduction. This plant would clearly not be covered by the prevailing Shchekino instructions. Denisenko appears to be arguing that the level of capacity utilisation at this, and

similar plants, reflects tight labour organisation and control with little opportunity to shed labour. As a consequence he argues that the material stimulation of these workforces has to be sponsored in a different way. He cites earlier experimental initiatives, at Perm for example, where over a longer time period norms for wage expenditures per rouble of output were established, as a possible way forward (108). The collapse of the Perm variant of the experiment in the earlier period had been caused by the instability of wage norms set by higher bodies yet Denisenko argues that the Shchekino instructions should be amended to accommodate this normative method. The source of the stimulation, at enterprise level, would then not only arise from the freeing of surplus workers but also from enhanced output causing the enterprise wage fund to rise. As already noted there are a number of problems involved with this approach (109).

The general point to be drawn from this debate was that the 1977 instructions were not likely to achieve their objective. As early as April 1977, only three months after their introduction, V.Lomonosov, the Vice-Chairman of the State Committee on Labour and Social Questions, instructed a wide reaching study of the logic, method and experience of the new instructions with a view to reviewing the experiment's dissemination at the end of 1977 (110).

The result of the debate and criticisms, noted above, was further changes in the instructions for the implementation

of the experiment, which were introduced in April 1978 (111).

These new regulations explicitly recognised the problems associated with the experiment and sought to remove some of the instabilities associated with the both the transition to the experiment and its operation. It was an attempt to restore the confidence of enterprises in the advantages of the experiment. This was to be achieved by retaining some elements of the 1977 regulations, restoring some elements that had been abolished, both in the 1970 and the 1977 regulations, plus the introduction of some new elements.

For example, the necessity for ministries to provide comprehensive plans for the introduction of the experiment, introduced in 1977 was retained (112). Furthermore, the responsibilities of ministries for the implementation of the experiment were extended. They were now obliged to establish, for every enterprise under their control, for the five year plan period, either normative levels for wage expenditures per rouble of output or fixed wage funds (113). The intention was to remove the instabilities that for example, the Shchekino plant had faced (114). To achieve a similar end, the ability to transfer the total unutilised wage fund economies to the material incentive fund, which had been lost in the early seventies was restored. The intention was to provide confidence at enterprise level that the results of any savings would actually accrue to the enterprise workforce and not be

clawed back by the ministry for other purposes.

The possibility of paying bonuses to piece-rate workers and special bonuses to repair workers, removed in the 1977 regulations, were reinstalled (115). These bonuses could be as high as 60% of either the time rate for the job or the piece-rate earnings. Furthermore, the necessity for manpower reductions to be assessed in relation to branch and inter-branch norms was seen as unrealistic, even if it was theoretically desirable, and it was therefore, abandoned. However, where workforce reductions were achieved not on the basis of these norms then only 70% of the economised wage fund could be retained (116). This reflects an assumption, which is probably correct, that without the existence of these norms manning levels are even higher.

Ministries were also given the authority to grant premiums and bonuses directly to departmental administrators or association managers, who successfully introduced the experiment into enterprises under their control.

The idea with these new instructions was to break the bottleneck in the implementation process (117). If ministries were compelled to set stable wage funds, intermediate officials were to be rewarded for implementing the experiment and the level of incentives stabilised then it was thought that the last impediments to the experiment's generalisation, would be removed (118). The

1978 instructions mark a shift in emphasis towards the recognition that the implementation of the experiment is mainly dependent upon the attitudes of ministries and association administrations (119). The Pulp and Paper Ministry is cited as an example of the desirable way forward were the ministry had drawn up a special long-term programme linking the introduction of the experiment to measures to increase technological processes, retrain workers and reorganise production units (120).

However, the 1978 regulations for the implementation of the experiment, operated for only a little over a year before they were in a sense superceded. In July 1979 a new planning resolution came into effect (121). These regulations were an attempt on the part of the ruling group to reinvigorate the economic mechanism and the regulations contained a series of measures that draw upon the experience of the experimental initiatives introduced in the period from the late sixties, including the Shchekino experiment. Consequently, the resolution included provisions that provide for the retention of economised wage funds, with any unutilised funds being transferred to the material incentives fund for use in the next year, plus a stipulation that they could only be used for their designated purpose and could not be clawed back by ministries or used for purposes like staffing new facilities (122); the resolution stressed the necessity to link rewards to work performance and increase labour productivity as a consequence, on the basis of long-term

norms for wages per rouble of output (123); the resolution gave all enterprises the right to pay bonuses to workers from savings in the wage fund, for enhanced productivity, widening their service zone or job combination (124).

Consequently, what were integrated measures designed for the implementation of the Shchekino experiment have been made available to all enterprises but in a fragmented form. This type of approach already had been attempted once, in the wage reform of the early seventies, with little appreciable success. It was argued then that the Shchekino experiment, in so far as it worked, achieved beneficial results because of the whole package of measures. The impact of the 1979 resolution, which appears to commit the same error, will be assessed in the next section. It should be noted that by 1980, the regulations for the implementation of the Shchekino experiment had been ammended no less than seven times, (this does not include those other economic measures that have a tangential bearing on the experiment) and given the complexity and contradictions within the instructions anyway, these instabilities helped little to promote the experiment's generalisation (125).

SECTION 5: THE SHCHEKINO EXPERIMENT IN THE AFTERMATH OF THE
1979 PLANNING RESOLUTION.

After the introduction of the 1979 planning resolution the pressure for the implementation of the Shchekino experiment remained. In the mineral fertiliser industry for example, the importance of which has already been noted, the planned task was to increase output by over 48% in the five year plan period (126). However, during the years of the 10th plan the industry had seen its workforce grow by almost 24% but in the 11th plan period it could only expect the size of the workforce to grow by approximately 6%, even though it had been estimated that it would require growth of at least 17.7% to achieve the planned tasks (127). Hence the significance of the further implementation of the experiment either to tighten internal labour organisation and release surplus workers in this industry or to do the same elsewhere and direct the freed workers into this industry. This situation was replicated in a host of other sectors and as Fil'ev notes what was needed was a "socio-economic instrument to rationally utilise labour" (128).

At the Shchekino plant itself the experiment was still continuing and the summary of results for the period from 1967 to 1981, still appears impressive, even after the difficulties the plant had experienced. The volume of production had risen 3.1 times since 1966, labour productivity was up 4.1 times and 1,814 personnel had been

released or 23% of the initial total workforce (129). It is significant to note that there is hardly any alteration in the sources of labour saving over the whole period, as shown on Table 44. A further significant point to note, is the small percentage of the workforce released through automation and the mechanisation of manual tasks. This illustrates both the problems that the Shchekino plant had in obtaining equipment and the more general problem of innovation and the provision of equipment to shed labour in this manner.

TABLE 44: The Sources of Labour Saving at the Shchekino Plant 1967-1980.

<u>Reason for Release.</u>	<u>Number</u>	<u>%</u>
Job Combination, New Norms, Widening service Zones.	725	54%
Mechanising Manual Work	71	5.3%
Automating Processes	67	5.0%
Centralising and Specialising Auxillary Work	198	14.8%
Rationalising Laboratory Work	154	11.5%
Other Measures	119	8.9%
Total Workers Released	1334	
Total ITR Released	466	

Source: V.Fil'ev, "O dalneishem vnedrenii Shchekinskogo metoda", Voprosy Ekonomiki, 1983, No.2, p.59.

The 466 ITR released represented 37% of the total ITR at the start of the experiment and were released as a consequence of rationalising the management structure,

condensing work and a variety of other measures. Likewise at the Bashkir Petro-Chemical Association, mentioned in Chapter 3, the experimental variant had been continued throughout the 10th Five Year Plan and output had been increased by 22%, whilst the workforce had been cut by 4,600 (130). The experiment was still being introduced, at some Soviet enterprises for the first time, with good effect. For example at an enterprise cited by Zharikov, the introduction of the experiment in 1978 led to the reduction of the workforce by 1,500 and labour productivity growth of 38% (131).

Furthermore, enterprises leaving the experiment fared badly. Aganbegyan cites the example of an enterprise in Omsk, where in the early seventies labour productivity had been growing at 4% per annum but after switching to the experiment this rose to 8% per annum (132). The plant, which previously had been 200 workers below its full complement, was able, after the introduction of the experiment, to release 2,000 workers and still raise output. However, in the mid-seventies at the behest of its ministry, the enterprise halted the experiment and as a consequence over the whole of the 10th Five Year Plan was only able to raise labour productivity by 12%. In the first two years of the 11th plan this has fallen even further and the enterprise has come a complete circle and is now experiencing labour shortages (133).

In a more general sense, during the years of the 10th Five

Year Plan, the experiment had released 968,000 workers, 6% of the industrial workforce, and 433,000 of these workers had been reintegrated into vacant posts or new shops at the same enterprise (134). Over the period from 1978, when the new regulations were introduced, a number of ministries increased the number of enterprises operating on the full experiment, see Table 45.

Table 45: Number of Enterprises Operating on Shchekino Experiment.

	<u>1978</u>	<u>1981</u>
Minpisheprom	57	311
Minkhimprom & Minudobrenii	160	216
Minlegprom	36	161
Minnefteprom	35	83

Source: P.Batkaev and S.Semin, "Shchekinskii metod v usloviyakh sovershenstvovaniya khozyaistvennogo mekhanizma", Sotsialisticheskii Trud, 1983, No.1, p.44.

However, the effect of the 1979 planning resolution on the dissemination of the experiment was to establish two types of enterprise. Firstly, there were those enterprises that fully implemented the whole package of Shchekino measures. Secondly, there were those that implemented some parts of the experiment. By early 1981, Fil'ev suggests that 2,003 enterprises were operating on the full Shchekino experiment and a further 7,251 enterprises and associations had implemented elements of the experiment (135). Batkaev and Semin, suggest that by the end of 1981 the figure had risen to 11,710 enterprises, employing more than 21 million workers. Radov notes that at these enterprises 216,000

people were released, 205,000 of whom were workers, 40% of whom were well qualified workers who filled posts at newly commissioned production facilities that otherwise would have remained unmanned (136). Clearly the experiment remains important for releasing workers (137).

Furthermore, the Shchekino experiment, as previously noted, was not intended to be applied solely to the industrial labour force. By the early eighties it had also been introduced into a number of other sectors of the economy with similar beneficial short-run results, although Soviet sources remain critical of its uneven distribution (138). For example, in 1980 the Shchekino experiment was extended to service workers in hotels, which are characterised by significant labour shortages (139). Furthermore, the experiment was further extended in the transport sector of the economy (140). In 1981, it was introduced into both the maritime fleet and river transport fleet where, as a result of job combination and widening service zones, over 31,000 workers were released (141). Also by 1981, the experiment was operating in 431 Sovkhoz and 230 enterprises of the Goskomsel'khoztekhnika (142). This resulted in enhanced output, productivity and increased average wages. At one Sovkhoz in the Crimea for example, labour productivity had increased 2.4 times over the eight years of the experiment's operation.

It would appear, because of the further implementation of the experiment in industrial branches, its extension to new

areas and its continuation at plants like Shchekino and Bashkir, that the changes in regulations had been successful. However, closer inspection yields a series of problems that qualify the effectiveness of the experiment and still deter enterprises from making the transition to it. It should also be noted that the Chemical industry, even though it was still one of the most advanced proponents of the experiment, was explicitly criticised in 1980, for lagging behind the needs of the economy (143). So the experiment was certainly no cure-all even in industries where it was conscientiously applied.

Firstly, in the 11,710 enterprises operating on the experiment in 1981, in comparison with 1980, labour productivity grew by an average of 3.4% whereas in non-Shchekino enterprises labour productivity grew by less than 1.5% over the same period (144). Obviously the Shchekino-like enterprises are doing better than their counterparts but the fragmentation of the experiment has yielded much lower average productivity gains than were achieved in the early days of the experiment.

Also the material incentive elements of the experiment were maintained at a similar level during this period. In 1982 as a result of the operation of the experiment, the total savings to the wages fund was approximately 400 million roubles and 1.4 million workers received wage supplements (145). But if 21 million workers are in enterprises operating on the experiment, this implies that only 6.6%

are receiving any direct material incentive from the experiment. The average wage supplement was a little over 20 roubles and although for some skilled workers this might rise to as much as 35-40 roubles, for the vast majority of workers it is an unimpressive material incentive (146).

The scale of the dissemination of the experiment also has to be placed in context. Even though the percentage of workers employed in enterprises operating on either full or partial Shchekino lines has risen, (according to Aper'yan this figure reached 70% by the end of 1982 (147)), only 6% of the industrial enterprises in the RSFSR are utilising the full experiment and in the USSR as a whole the proportion is no higher (148). As Grotseskul' has commented, the real benefits of the Shchekino experiment are only achieved if it is implemented fully in stable conditions. The partial implementation of the system does little real good, but does serve as a cosmetic change and inflates the figures for the experiment's dissemination (149). This is a repetition of what occurred in the period after the wage reforms in the early seventies. As Mirgaleev notes, the opportunity to implement the experiment on a partial basis should not be seen as a substitute for full implementation where possible. In a study of RSFSR enterprises in the year after the 1979 planning resolution had been implemented, it was found that the full Shchekino system freed 50% more workers than any partial, Shchekino-like, changes (150).

Even though the 1979 resolution demands wage fund and plan stability as the basis for the implementation of the experiment, this is still not being achieved and is bemoaned by virtually all commentators (151). The Shchekino director, Melent'ev, points out that during the 10th Five Year Plan, as in the 9th, the wage fund at Shchekino was further reduced, this time by 1.3 million roubles (152). Even though this action is contrary to the resolution, unstable wage funds are still the norm. At the Bashkir Association whilst productivity had increased by 24% in 5 years, average wages had only risen by 8% because of wage fund instability (153). Ministries effectively ignore the advances made by these experimental enterprises. Furthermore, in the case of the mineral fertiliser industry cited above, its task of increasing productivity and overcoming its labour shortage was made more difficult by the fact that its overall wage fund was 280 million roubles smaller than it should have been (154). This makes it virtually impossible to implement the Shchekino experiment more widely as the ministry is effectively asking for simultaneous increases in productivity and cuts in wage funds from its subordinate enterprises.

There still remains a degree of arbitrariness in the way that the planners determine plans, both for output and for subsidiary objectives, like the reduction of managerial and administrative staff. This is determined on a flat percentage basis and as a consequence discriminates against enterprises who have already reduced their administrative

ranks by implementing the Shchekino experiment as they are given the same percentage target as enterprises who have not (155). Enterprise management can then reasonably argue that if the reduction is going to be administered from outside why bother with the Shchekino initiative. If they do implement the experiment they will be at an immediate disadvantage when the targets are imposed. In both respects this further slows the introduction of the experiment. It has been argued that enterprises implementing the experiment should be excluded from the targets for staff reduction or alternatively the size of the administrative staff should be assessed as a percentage of the total workforce and not as a simple flat rate reduction (156). This would require a greater degree of sophistication from planners as differing production conditions would require a different ratio between managerial/administrative staff and the total workforce. The point is that in its present form this type of planning decision does not help the wider dissemination of the experiment.

Similar problems arise because statutes in one area still operate to negate initiatives in another. This results from the bureaucratic complexity of the Soviet economic mechanism. For example, up to the early eighties job combination could impair pension rights and hence when workers realised this they refused to combine jobs or reversed their previous decisions. This was only resolved by the new conditions for job combination (157).

A further problem emerges from the experience of the Polimir Association (158). Here the introduction of the Shchekino experiment had encouraged the workers in a number of production shops to master all the skills in their shift and the consequence had been a reduction of workers per shift from 13 to 9. The introduction of computerised control mechanisms had reduced the managerial staff and the reorganisation of services like internal transport had led to further workforce reductions. The net effect had been to raise output by a factor of two, productivity by a factor of three and significant gains had been made in labour discipline. However, this successful enterprise is continually dogged by difficulties because the integrated technological nature of its production process makes it highly dependent upon good quality equipment. A breakdown in any section can bring the whole enterprise to a halt (159). Consequently, poor reliability and durability of equipment, coupled with a lack of spare parts reduces the effectiveness of the enterprise. This simple example shows that isolated success can easily be negated. This problem will remain unresolved until all the enterprises in the supply chain switch to the experiment and product quality and availability changes dramatically.

All the points noted above, refer to pressures operating against the implementation of the experiment at plant level which therefore, impedes its generalisation but there is another dimension that requires consideration. When the experiment is introduced it is implemented by an individual

enterprise or by a series of enterprises at the behest of their ministry but there is no necessary localised linkage between these plants. The potential problems this generates can be explained by considering the example of the Shchekino enterprise itself. In the early period, as already noted, a high proportion of the released labour was reabsorbed at the plant to fill existing vacancies or to man new production facilities. In this sense the experiment is concerned with the internal reorganisation of one enterprise within one ministry. However, the ultimate aim is to bring about a freeing and redistribution of labour in a wider sense. One problem, noted previously, is that the labour released under the terms of the experiment is, by definition, likely to be absorbed into plants where the experiment is not in operation and where labour organisation is lax. As a consequence no overall gains may arise. Furthermore, if the enterprise implementing the experiment runs into difficulties, as indeed the Shchekino plant did, workers may well leave the enterprise and avoid the experiment. In order to overcome this, attempts were made to disseminate the experiment to other enterprises within the locale. Given that the chain of economic and planning control is predominantly vertical through the hierarchical structure of ministries, associations and enterprises this horizontal co-ordination was primarily sponsored by the city party Soviet. The former director of Shchekino, Sharov, headed a city party committee, which spread the experiment to 38 collectives in both industrial and agricultural sectors in the area (160). As Grotseskul'

points out, nearly all the enterprises in Shchekino, producing 90% of the city's industrial output now operate on Shchekino lines (161). Furthermore, the experiment has been extended to the service and transport sectors. However, even in this context there is a long way to go to achieve real control over the utilisation of labour because in the province of Tula as a whole there is an acute labour shortage which could only be resolved if the experiment was generalised even further into the countryside.

What is being suggested by the Soviet sources, is that the Shchekino experiment should be extended in two directions. Firstly, the experiment should be comprehensively implemented in all the enterprises of one ministry. This is part of the intention of the economic experiment implemented by Andropov from January 1st 1984 (162). The instructions for the ministries chosen for the experiment include all the major elements of the Shchekino experiment (163).

Secondly, it has been suggested that the experiment should be extended not just vertically through a ministry but also horizontally through a particular region. This would have the advantage of co-ordinating the labour force across the boundaries of ministerial responsibility. Grotsskul' points out that the Tula province would be ideal for such an experiment for a number of reasons (164). Not only was it the home of the original experiment but also more than half of the province's industrial enterprises are already

operating on the experiment and this is scheduled to rise even further during the 11th Five Year Plan. As the province has a severe labour resource problem the implementation of a region-wide Shchekino initiative would allow greater co-ordination and direction of labour resources. Implicit in this is even further controls over the placement of workers released. As Dyker has pointed out, more Shchekino without more control is the recipe for greater turnover and wastage (165).

There are precedents for this type of initiative. An experiment in the agricultural sector was established at Abasha in Georgia in 1973 (166). This was an attempt to group together, at a raion level, existing kolkhoz, sovkhoz and related organisations under one controlling body. This then provided a variety of material and financial incentives for workers, as well as a new form of managerial co-ordination. As a result of the experiment agricultural output grew from 5.3 million roubles in 1974 to 8.3 million roubles in 1977. Similar beneficial results were achieved in the construction sector which was also co-ordinated in the new system (167). The success of the experiment led to its adoption by other neighbouring raions and from January 1st 1982, it was generalised throughout the republic. In March 1982 the wider dissemination of the experiment was pressed for throughout the whole of the USSR (168).

Attempts were also made to transfer the experiment to an urban area at Poti in Georgia (169). This experiment

illustrates the type of problems a horizontal Shchekino experiment might be able to solve and illustrates the problems it may face. In Poti there were between 60 and 70 enterprises under the jurisdiction of 30 different ministries. This resulted in poor organisation of resources and little local co-ordination between enterprises. Overall this resulted in a number of disparities in wages, housing and living conditions and levels of capacity utilisation. At the local level the municipal authorities are powerless as enterprises relate upwards through their ministerial hierarchy. What the experiment instituted was a series of local linkages via a body known as the Territorial Inter-Branch Association, which was responsible for co-ordinating economic development in the municipal area. For example, a register of the various waste products from the different enterprises was set up and attempts were made to utilise these for the production of consumer goods, needed locally (170). Further initiatives involve setting up more enterprises to meet local needs and the possible linking of the town with nearby rural areas to extend the experiment.

It is an extension of this type of initiative that Sharov, Grotseskul' and Melent'ev have called for in the Tula province (171). Nevertheless, it is instructive to note that almost 18 years after the initial experiment was established and after no less than seven changes in the regulations for the implementation of the experiment plus changes in regulations referring to subsidiary elements,

like job combination, norms, labour turnover etc Soviet sources are still complaining about the slow dissemination of the experiment and still citing similar reasons for this phenomenon, i.e. wage fund and plan instabilities (172). It is also instructive to note that the conditions cited as necessary to further develop the Shchekino experiment involve a familiar list of items; increased technically validated norms, technical progress (173), political campaigns to explain the importance of the experiment to the workforce (174) and ironically better labour discipline (175). It has also been suggested that in the years when the experiment was most efficient the wage savings were allocated through collective consumption, (this supports the argument advanced in Chapter 3) and calls have been made to reassert this form of distribution (176). The inability to resolve these problems suggests that the difficulties facing the experiment are much deeper than the administrative and institutional problems so far identified from the Soviet sources. This question is taken up in the next section.

SECTION 6: THE DISSEMINATION OF THE SHCHEKINO EXPERIMENT

AND THE LOGIC OF SOVIET PLANNING

As pointed out in the previous section, the Soviet response to the problem of the non-generalisation of the experiment, was almost entirely administrative and sought to solve the problems by changing the instructions for the implementation of the experiment. In the first instance however, the non-generalisation is explicable by considering the underlying principles of the experiment in relationship to the logic of Soviet planning and then relating this to the political economy of the USSR. This latter task will be undertaken in the final chapter after a number of other experimental initiatives have been considered.

The paradox is that the Shchekino plant, plus the other experimental enterprises, could successfully implement the experiment but still fail and this needs to be explained. For the individual enterprise, at Shchekino or elsewhere, the successful implementation of the experiment did not lead to an unambiguous strengthening of their position either vis-a-vis their ministry, other enterprises, central planning bodies or their workforce.

The Shchekino plant for example, was both successful and a well-known prestige project for the chemical industry. Nevertheless, this could not be translated by plant management into increased access to the necessary resources

for investment and expansion; it gave the plant little or no advantage over other enterprises in the ministerial allocative process nor in the attempt to retain or attract skilled workers; it led to the eventual loss of sections of its workforce because of the removal of bonuses and the eventual poor provision of housing etc.; it weakened its position in relation to the chemical ministry, making it more dependent, as its safety factor had been removed; overall it made the enterprise more vulnerable to plan underfulfilment and failure.

In comparison, consider a firm under the capitalist mode of production that had managed to introduce an innovatory form of work organisation that increased the productivity of the labour it employed. The benefits of increased exploitation would lead to an increase in the relative surplus value extracted and would be reflected in a higher than average rate of profit for the firm. This would yield direct advantages for the firm and would allow it to increase the level of investment, either through the use of retained profits or from its ability to attract external funds. In other words success in the extraction of relative surplus value from the labour employed will be reflected in improved access to funds in the capital markets. Furthermore, other firms failing to follow the innovatory move will find their relative failure also reflected in their access to investment funds and the possibility of failure will emerge. In other words the dynamic of changes in the process of surplus extraction will be an external

constraint upon all firms. A link exists between the efficiency of surplus extraction and the success and failure of the firm. This dynamic creates repercussions in both labour and capital markets. Labour organisation which is successful will be replicated elsewhere and resources will shift towards the innovatory enterprise and its followers.

With regard to the Shchekino experiment in the USSR, the process almost worked in reverse. In so far as investment funds are still allocated by an administrative process from the centre the successful implementation of the experiment gives no direct advantage. Remember savings in the wage fund could not be translated into improved access to capital equipment or plant only into increasing either individual wages or collective consumption at the enterprise and over time even this discretion was eroded. In so far as the individual plant's safety factor is reduced, yet the problems that made it necessary in the first instance are not removed from the economy as a whole, the enterprise may well be in a worse position than previously and may well be more vulnerable to failure.

How is this vulnerability to be explained? I would argue that the ministries simply conform in this respect to the logic of the Soviet planning process. If an enterprise is successful from the point of view of the ministry it could be viewed as a lesser priority than an unsuccessful enterprise. Hence it makes sense in the short-run, to

transfer economised wage funds from a Shchekino-type enterprise to an enterprise that may be experiencing labour shortages or to utilise these economised funds for hiring staff for new production capacity that may be otherwise unmanned. Given that the option of closing an enterprise down and transferring its resources from one location to another is limited, both practically and politically, the ministry has to nurse along both innovatory and backward enterprises. It is after all responsible for the entire output of its sector. The point being made is that even though the Shchekino experiment introduced a method that was successful at some enterprises it did not introduce a dynamic that unambiguously pressurised those enterprises that did not implement the experiment into adopting it. It introduced no mechanism that established penalties for failure to introduce the experiment. However salutary the impact of the experiment, its implementation remained at the discretion of ministries and enterprises, to whom it did not appear as an unavoidable necessity. As already noted, it is unlikely that any ministry could implement the experiment throughout all its enterprises simultaneously given the negative control operated by the workforce, even over experimental initiatives. Therefore, plants not operating on Shchekino lines would not necessarily suffer and may indeed benefit. The experiment did not force enterprises to fail. This is clearly different from capitalism in general, where enterprises who fail to innovate disappear.

Those who try to argue that the USSR is simply a giant statified 'capital', competing on the world market attempt to draw comparisons with multi-national corporations, talking for example of the "USSR Ltd". However, in large multi-national, multi-plant firms there are no constraints of the sort identified above. The decision to close peripheral or branch plants is dictated by the same forces that determine whether competitive individual capitals survive. The law of value enforces its logic upon all firms, whether they are competitive, oligopolistic or monopolistic. However, that logic clearly does not penetrate the Soviet economy. If it did experiments like Shchekino would either work or would be unnecessary in the first place.

A further question that needs to be considered is the differential diffusion of the experiment. Thus far this has been explained as the result of the traditional bias in the Soviet planning system towards Department 1 industries. This needs further consideration.

Firstly, it could be linked to the simple fact that some ministries are more innovative than others and therefore, more supportative of the experimental initiatives. This explanation rests upon the chance element of staffing and personnel at ministry level. As staff changes it would be expected that the dissemination of the experiment would fluctuate. However, the uneven pattern of diffusion appears to remain over time. This does not appear therefore, to be

a particularly persuasive explanation.

Secondly, perhaps it is more convincing to argue that ministries adopt experimental initiatives if they are under particular pressure to improve their performance, within the overall economic performance. This was certainly the case with the chemical industry, which was, and still is, a high priority sector. Hence state planning agency, ministry and enterprise attention will focus on specific problems and from this unity of purpose success will be achieved in particular sectors. However, as you move away from these priority sectors no similar coincidence of interests exists and experimental initiatives will either not be introduced or if they are, only in a half-hearted manner. This however, cannot be a complete explanation as there are problem sectors, like construction and agriculture, which in some senses appear tailor-made for the experiment, particularly given the labour shedding potential of both sectors, yet it was not widely disseminated within either of them.

Thirdly, it could be argued that ministries resist the implementation of the experiment because it threatens their secure existence. As noted, ministries also have a vested interest in maintaining a degree of slack, vis-a-vis other ministries, as it allows room for manoeuvre. Perhaps therefore, low prestige and low priority ministries see the implementation of the experiment weakening their already weak position and making them even more vulnerable. After

all there is no guarantee that the labour shed from one of their enterprises, in the course of tightening labour organisation, will be necessarily redeployed into enterprises of the same ministry. In fact the ultimate logic of the experiment could not provide such a guarantee as radical redeployment of surplus workers is precisely its eventual aim. Furthermore, ministries may have perceived the experiment as an exercise in introducing greater enterprise autonomy and this could have increased their resistance to its dissemination. In reality these arguments are difficult to sustain as the impact of the experiment, in those ministries most actively pressing its generalisation, was to strengthen the ministry's position in relation to its subordinate enterprises, rather than the reverse. The enterprises became more dependent upon ministry level decisions, as their safety factor was cut, thus increasing their vulnerability and the possibilities of failure.

I would argue that there is a relationship between the dissemination of the experiment and the nature of work organisation and control in different branches of Soviet industry, both the actual forms of control prior to the implementation of the experiment and the possibilities of control after its implementation. Where direct producers had most control over the nature of their work and its intensity, in sectors like coal mining and construction for example, the experiment was hardly implemented at all. However, in sectors with a higher degree of technologically

based production and where work intensities were more amenable to technical control, the experiment was implemented more successfully. For example, where line speeds are in part determined by automated or semi-automated production techniques it appears easier to implement the experiment. Again the chemical industry is a good example. From the point of view of enterprise management in these sectors the experiment could be viewed as a method of breaching the traditional control exercised by the direct producers and thereby allowing the introduction of further technically determined work patterns and intensities. This could also explain the previously noted link between the introduction of the experiment and the importation of foreign technology. The desire to utilise this as efficiently as possible and to imitate manning levels in the countries of origin, would forge a link between the incidence of imported technology and the introduction of the experiment. This suggests therefore, that the differential spread of the experiment reflects the possibilities of partially modifying the degree of direct producer control over their own labour process. This is another example of the way in which the experiment accommodated to present Soviet industrial realities rather than radically transforming them.

Ultimately, it is very difficult to provide an unambiguous answer to the question why the experiment spread in a differentiated manner. Similar difficulties are attached to the question of why different ministries had different

degrees of success when the experiment was actually implemented. It could be that the experiment was applied with differing degrees of intensity in different branches or that initial manning levels were very different or because of differing degrees of ministry, enterprise management or worker resistance to the experiment. The point is however, that the experiment introduced no new dynamic to the Soviet planning system that would firstly, equalise manning levels between disparate or even similar enterprises; secondly, pressurise ministries or enterprises into implementing the experiment; thirdly, identify unambiguously those enterprises that were failures.

Furthermore, what has been suggested in this section, is that there are limits to the potential achievements of the experiment that will increase the possibility of failure for the individual enterprise, which is the reverse of what is desirable. The rational enterprise manager will need to evaluate the costs and benefits of implementing the experiment. Clearly many recognised the problems of increasing vulnerability brought about by shifting plan targets, reductions in the wage fund, failures to receive investment in either new capacity or the renewal of plant and equipment, and the fact that if all enterprises did not simultaneously implement the experiment then, given the apparent labour shortages, labour would simply move to plants where work intensity was lower and rewards similar, made the experiment a liability. Ultimately, they recognised that the success of the enterprise, still the

key to their own success, would be constrained by the external environment which would not necessarily have changed. In other words the operation of the planning system contradicts the logic of the experiment and will ultimately retard its dissemination. This is therefore, an argument that suggests that neither at enterprise management level nor ministry level was the experiment perceived to be unambiguously in their interest and as it set up no spontaneous dynamic that forced its implementation upon enterprises or ministries, it was avoided. This cannot be the final answer to the question as it fails to explain why the planning system constrains the experiment and why the necessary dynamic is absent. This can only be explained after a consideration of other experimental initiatives which had similar intentions. The broader issue of the political economy of the USSR and all of these experimental initiatives will be taken up in more detail in Chapter 6.

1. This is particularly true of plant management. For example, P.Sharov became a Hero of Socialist Labour, and was awarded the Order of Lenin and the Hammer and Sickle Gold Medal, for fulfilling the assignments of the 9th Five Year Plan and increasing labour productivity. See Pravda 13/1/76.

2. V.Parfenov and V.Shvetsov, Pravda, 28/3/77, p.2. (Hereafter 1977a). They point out that prior to the implementation of the experiment at Shchekino it was found that the enterprise workforce exceeded the planned ceiling by 200. The experiment was only authorised after these 200 jobs were removed from the plant's roster.

3. See Section 7, Chapter 2, for details of labour shortages. S.G.Semin, "Novye rezervy Shchekinskogo metoda", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1976, No.4, p.93, points out that the numbers freed in the chemical industry up to 1975, were sufficient to staff 350 additional shops.

4. See Section 5, Chapter 3.

5. P.Sharov, op.cit., p.89. See also, "Vospitanie sotsialisticheskoi distsipliny truda", Sotsialisticheskii Trud, 1975, No.7, p.34.

6. K.K.Cherednichenko and I.I.Gol'din, "Shchekinskii Metod", Moscow, 1978, p.14.

7. Ibid., p.34. See also "Vospitanie ... ", op.cit., p.34.

8. S.Ivanov, "Shchekinskii metod v desyatoi pyatletke", Sotsialisticheskii Trud, 1977, No.4, p.13. This article is reproduced almost word for word by Shkurko in his chapter on the Shchekino experiment in "Stimulirovanie kachestva i effektivnosti proizvodstva", Moscow, 1977, pp.112-131.

9. K.Cherednichenko and L.Gol'din, "Shchekinskii metod: itogi i perspektivy", Sotsialisticheskii Trud, 1976, No.2, p.52.

10. Ivanov, op.cit., p.13.

11. Ibid., p.14.

12. Ibid., p.14. Cherednichenko and Gol'din, (1976), op.cit., p.58, point out that the benefit of this also reflects on the levels of supervisory staff who can, if discipline improves be released for productive work. A.Mirgaleev, "Shchekinskii metod i ego perspektivy", Voprosy Ekonomiki, 1977, No.10, p.104, cites a further indicator of these benefits, at plants in Perm and Minsk, overtime hours fell by 7 and 4 times respectively.

13. Y.Golovin, A.Adamchuk and V.Savel'ev, "Zadaniya pyatletki i Shchekinskii metod", Sotsialisticheskii Trud, 1974, No.8, p.48. See Ivanov, op.cit., p.13, who points out that at the Angarskom petro-chemical plant 10,000 workers were involved in in-plant training in the period 1971-75.
14. For example, at the plant cited by Golovin et al, productivity increased by only 8% over the planned level and only 600 workers were released. Ibid., p.47.
15. Shkurko, (1975), op.cit., p.124; Cherednichenko and Gol'din, (1976), op.cit., pp.53-56; Cherednichenko and Gol'din, (1977), op.cit., pp.134-135.
16. Virtually every source referred to in this thesis, from 1970 onwards, is critical of the slow dissemination of the experiment. See for example, Semin, op.cit., p.93; P.G.Bunich, "Ekonomicheskie stimulirovanie na sovremennom etape: puti sovershenstvovaniya", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1975, No.6, p.67.
17. V.Boldryev, Pravda, 26/5/72, p.2.
18. Pravda, 26/7/78, p.1.
19. Parfenov and Shvetsov, (1977a), op.cit., p.2.
20. L.Kostandov, Izvestia, 11/12/75, p.3. See also Ekonomicheskaya Gazeta, 1975, No.9, p.2.
21. Ivanov, op.cit., p.12; Semin, op.cit., p.93.
22. Ivanov, op.cit., p.12. A.V.Bachurin, "Zadache uskoreniya rosta proizvoditel'nosti truda", Voprosy Ekonomiki, 1978, No.8, p.11, gives a further indication of the imbalance in the dissemination of the experiment when he notes that out of 410 experimental enterprises for which he has information, as of 1/11/75, 70 were in the petroleum and petro-chemicals sector; 150 in the chemicals industry; 100 in pulp and paper; 12 in food and 28 in microbiology.
23. L.Danilov and V.Korchagin, "Sovershenstvovanie upravleniya trudovymi resursami", Planovoe Khozyaistvo, 1976, No.11, p.25.
24. V.Selyunin, Sotsialisticheskaya Industriya, 24/6/76, p.2.
25. This has to be compared with the original view, (that was almost akin to a Soviet version of Say's Law), that viewed the increase in Department 1 output and productivity advances in excess of wage increases as sufficient in themselves to resolve economic problems.
26. E.Manevich, "Defitsit i rezervy rabochei sily", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1978, No.2, p.82. After all the basic intention of the experiment, according to G.Abramov, "Razvitie Shchekinskogo

opyta i normativnyi metod planirovaniya zarabotnoi platy", Sotsialisticheskii Trud, 1974, No.12, p.22 is to link work and rewards.

27. See for example the data in Table 6.

28. See the views of Kunel'sky and Kuz'mirov cited by P.Rutland, op.cit., p.351. The more usual argument is made A.Radov, Sovetskaya Rossiya, 22/7/81, p.2 who argues that the experiment is applicable everywhere. See also Cherednichenko and Gol'din, (1978), op.cit., p.237.

29. See the example of the Bashkir plant cited in Section 6 of Chapter 3.

30. Yu.Kamzin, Pravda, 19/5/73, p.3.

31. Ibid., p.3.

32. Ibid., p.3.

33. V.Drozdo, Sotsialisticheskaya Industriya, 17/11/76, p.2.

34. Ibid., p.2.

35. L.Danilov and A.Kokhova, "O stimulirovanii vysvobozhdeniya rabotnikov na predpriyatiyakh", Planovoe Khozyaistvo, 1975, No.3, pp.44-45.

36. Cherednichenko and Gol'din, (1978), op.cit., pp.218-222.

37. Ibid., p.219.

38. Ibid., pp.221-222.

39. "Materialy XXV s'ezda KPSS", Moscow, 1976, p.43.

40. "KPSS v resolytsiyakh i resheniyakh s'ezdov, konferentsii i plenumov", Moscow 1972, Vol.10, pp.82-90.

41. "Materialy XXIV s'ezda KPSS", Moscow, 1971, p.70.

42. "Materialy XXV", op.cit., pp.172-173.

43. L.Brezhnev, Pravda 25/10/76; Pravda 20/1/77; Sotsialisticheskii Trud, 1977, No.4, p.7.

44. See for example the debate around A.P.Butenko, "Eshche raz o protivorechiyakh sotsializma", Voprosy Filosofii, 1984, No.2, pp.124-129. Butenko attempted to inject some realism into the debate around the question of contradiction and antagonism in the USSR. Pointing out, in a very circumspect and guarded manner, after paying

lip-service to traditional formulae, that the possibility of antagonistic relations under 'socialism' should be taken seriously and studied. This avenue of debate was firmly closed by C.Chernenko, Pravda, 14/6/84, p.2 and R.Kosolapov, Pravda, 20/7/84, pp.2-3, who reasserted the contradiction-free nature of 'socialism' in the USSR.

45. S.Shkurko, "Voprosy stimulirovaniya proizvoditel'nosti truda", Planovoe Khozyaistvo, 1971, No.8, pp.10-12.

46. See for example, P.Sharov, op.cit., p.2; Baranenkova, op.cit., p.51; Babaikov, Pravda, 1/10/69, p.2.

47. Boldyrev, Pravda, 26/5/72, p.2.

48. The wage changes were introduced in December 1972. See Sharov, (1975), op.cit., p.98.

49. Baranenkova, op.cit., p.54; T.Khachaturov, "Aktual'nye voprosy intensivifikatsii obshchestvennogo proizvodstva", Planovoe Khozyaistvo, 1974, No.6, pp.12-19.

50. Selyunin, op.cit., p.2.

51. Antonov, Pravda, 23/1/70, p.2; See also A.Suyumbaev, Pravda, 5/5/70, p.3.

52. Parfenov, Pravda, 30/6/73, p.2.

53. Karpenko, Izvestia, 28/1/70, p.3

54. Pravda, 9/10/69, p.1

55. Ekonomicheskaya Gazeta, No.1, 1971, p.8.

56. See for example, A.Aganbegyan, Literaturnaya Gazeta, 4/5/77, p.4.

57. V.Novozhilov, Pravda, 28/1/70, p.1.

58. Boldyrev, op.cit., p.2.

59. Parfenov, op.cit., p.2

60. See Chapter 3, Section 6.

61. Boldyrev, op.cit., p.2.

62. Rutland, op.cit., p.356, describes the origins of this term.

63. Parfenov, op.cit., p.2.

64. Parfenov, 1/7/73, p.2.

65. Mirgaleev, op.cit., p.106.

66. Table 39 shows that in the two years from 1971 to 1973

almost 600 enterprises initiated the experiment. In the following six years only a further 500 enterprises joined the experiment. Hence the rate of adoption slowed rather than accelerated.

67. See Tables 15-19.

68. Parfenov and Shvetsov, (1977a), op.cit., p.2.

69. A similar argument has been advanced with regard to recent productivity gains in the UK under the impact of Tory economic policies. See D.Jones, "Productivity and the Thatcher Experiment", Socialist Economic Review, 1983, p.42.

70. Most Soviet sources obscure this question by calculating growth in output or productivity over the whole time period of the experiment. This continually provides impressive figures but hides the slow down in growth taking place, as shown on Table 42.

71. As Semin suggests in the second phase of the experiment there were inevitably fewer workers to release. Semin, op.cit., p.94. Cherednichenko and Gol'din, (1978), op.cit., p.14.

72. See Chapter 2, Section 4.

73. Antonov, Pravda, 29/1/70, p.1.

74. Parfenov and Shvetsov, 29/3/77, p.2. (Hereafter 1977b).

75. Ibid., p.2.

76. Ibid., p.2. They actually suggest that the plant was operating at 140% of its rated capacity.

77. Ibid., p.2. This was coupled with another negative feature. As a result of freeing workers the plant did not have sufficient workers to allocate for house building. The inability to provide housing had already been causing concern as it was resulting in increasing labour turnover. See V.Slepykh, Sotsialisticheskaya Industriya, 30/11/75, p.3.

78. V.Selyunin, Sotsialisticheskaya Industriya, 24/6/76, No.148, p.2.

79. Parfenov and Shvetsov, (1977b), op.cit., p.2. See also, Slepykh, op.cit., p.3.

80. Ivanov, op.cit., p.17.

81. Parfenov and Shvetsov, (1977b), op.cit., p.2.

82. V.Slepykh, op.cit., p.2.

83. N.R.Melent'ev, Pravda, 14/6/82, p.3.

84. Mirgaleev, op.cit., p.110.
85. Ibid., p.111.
86. S.Prokhvatilov, Trud, 1/11/75, p.2.
87. P.Sharov, op.cit., p.2. A.Myasnikov, Trud, 17/7/79, p.2, makes the point that even if planning from the achieved level had had a purpose, in the recent past, it was now inappropriate for the experimental enterprises at least.
88. See for example, A.Dybtsyn, Pravda, 9/12/77, p.2.
89. Mirgaleev, op.cit., p.108.
90. It could be argued that if all ministries adopted a vigorous Shchekino approach then the vagaries of the planning system would disappear. However, the more conservative strategy will be self-fulfilling.
91. Parfenov and Shvetsov, (1977b), op.cit., p.2.
92. A.Aganbegyan, Izvestia, 1/4/75, p.2.
93. A.Aganbegyan, Literaturnaya Gazeta, 4/5/77, p.4.
94. See Ekonomicheskaya Gazeta, February 1977, No.6, pp.17-18.
95. See Section 2 of this chapter.
96. See Goskomtrud SSSR, Gosplan SSSR, Ministerstvo Finansov SSSR i VTsSPS, "Usloviya dalneishego vnedreniya kompleksnogo metoda sovershenstvovaniya organizatsii truda, material'nogo stimulirovaniya i planirovaniya po opytu Shchekinskogo khimicheskogo kombinata v decyatoi pyatletke", 27/4/77. Reproduced in Ekonomicheskaya Gazeta, No.7, 1977, pp.17-18.
97. Cherednichenko and Gol'din, (1978), op.cit., pp.119-122.
98. Ekonomicheskaya Gazeta, op.cit, p.17.
99. Pravda, 29/3/77, p.2. The problem of norms has already been discussed in Section 6 of Chapter 2. By 1976 branch and inter-branch norms only existed for 40% of industrial workers. See Y.Chubarov, "Ekonomicheskie usloviya razvitiya Shchekinskogo opyta", Sotsialisticheskii Trud, 1976, No.2, p.61. By 1977, whilst technically validated norms were available for approximately 80% of industrial workers, only 80% of these were branch and interbranch norms. See P.Batkaev, "Vazhnoe napravlenie stimulirovaniya ekonomii truda", Sotsialisticheskii Trud, 1978, No.7, p.7. Also Shkurko, (1977), op.cit., pp.126-128.
100. Parfenov and Shvetsov, (1977b), op.cit., p.2.

101. V.Selyunin, Sotsialisticheskaya Industriya, 2/3/78, p.2.
102. Ibid., p.2.
103. Pravda, 29/3/77, p.2.
104. Parfenov and Shvetsov, (1977b), op.cit., p.2.
105. Pravda, 29/3/77, p.2.
106. A.Mirgaleev, Sotsialisticheskaya Industriya, 15/3/78, p.2.
107. I.Denisenko, Sotsialisticheskaya Industriya, 28/3/78, p.2.
108. Ibid., p.2.
109. See Section 6 of Chapter 2.
110. V.Lomonosov, Pravda, 28/4/77, p.2.
111. Goskomtrud SSSR, Gosplan SSSR, Ministerstvo Finansov SSSR i VTSSPS, "Poryadok primeneniya Shchekinskogo metoda sovershenstvovaniya organizatsii truda material'nogo stimulirovaniya i planirovaniya", reproduced in Sotsialisticheskii Trud, 1978, No.7, pp.9-11 and Ekonomicheskaya Gazeta, No.21, 1978, p.2.
112. Point 10, Sotsialisticheskii Trud, op.cit., p.11.
113. Point 4, Ibid., pp.10-11.
114. See Section 3 of this chapter.
115. Point 2, Ibid., p.10.
116. Point 4, Ibid., p.10.
117. N.Kuznetsov, "Intensivnye faktory ekonomicheskogo rosta i razvitie Shchekinskogo metoda", Sotsialisticheskii Trud, 1978, No.8, p.30.
118. Pravda 26/7/78, p.1.
119. See I.Podugol'nikov and V.Shcherbatykh, "Organizuyushchaya rol' ministerstva", Sotsialisticheskii Trud, 1978, No.8, p.22 and A.Platonov and M.Shelyd'ko, "Ministerstvo - organizator vnedreniya Shchekinskogo metoda", Sotsialisticheskii Trud, 1978, No.12, p.18.
120. Pravda, 26/7/78, p.1.
121. See TsK KPSS & Soveta Ministrov SSSR, "Ob ulushenii planirovaniya i usilenii vozdeistviya khozyaistvennogo mekhanizma na povyshenie effektivnosti proizvodstva i

kachestva raboty", in "Resheniya partii i pravitel'stva po khozyaistvennym voprosam", Vol.13, 1979-1981, Moscow, 1981, pp.78-119.

122. Ibid., p.105.

123. Ibid., p.113. A great deal of emphasis is placed on the future possibilities of job combination as a result of introducing the Shchekino experiment. See for example, G.Molchanov, "Shchekinskii metod i ispol'zovanie rezervov", Sotsialisticheskii Trud, 1979, No.2, p.18 and G.Bogomolov and P.Vanyarkin, "Sotsialisticheskoe sorevnovanie i Shchekinskii metod", Sotsialisticheskii Trud, 1979, No.4, p.40.

124. Ibid., p.114.

125. See Cherednichenko and Gol'din, (1978), op.cit, pp.199-202.

126. V.K.Borodin, Pravda, 14/6/83, p.3.

127. V.Fil'ev, "O dalneishem vnedrenii Shchekinskogo metoda", Voprosy Ekonomiki, 1983, No.2, p.58.

128. Ibid., p.58.

129. Ibid., p.59.

130. N.Mironov, Pravda, 8/10/81, p.2.

131. V.Zharikov, "Shchekinskii metod i organizatorskaya rabota na predpriyatii", Sotsialisticheskii Trud, No.10, 1978, p.42

132. A.Aganbegyan, Trud, 12/12/82, p.3.

133. Ibid., p.3.

134. P.Batkaev and S.Semin, "Shchekinskii metod v usloviyakh sovershenstvovaniya khozyaistvennogo mekhanizma", Sotsialisticheskii Trud, 1983, No.1, p.44.

135. Fil'ev, op.cit., p.59.

136. Batkaev and Semin, op.cit., p.44. Also see A.Radov, Sovetskaya Rossiya, 19/7/81, p.2. (Hereafter 1981a).

137. L.Brezhnev in his speech to the 28th Congress stressed the importance of fully utilising the Shchekino experiment and producing more with fewer workers. Cited by P.Batkaev, "Ob ekonomicheskikh usloviyakh vnedreniya Shchekinskogo metoda", Sotsialisticheskii Trud, 1979, No.5, p.35.

138. Batkaev, op.cit., p.33.

139. See Yu.Pak, Literaturnaya Gazeta, 9/1/80, p.13 who cites the example of four Soviet hotels where the planned

level of staff is 4,677 who are responsible for a maximum total number of guests of 7,404. (In one of the hotels cited the planned staff level actually exceeds the maximum number of guests). Nevertheless, the hotels are unable to attract a sufficient staff hence the attractiveness of the Shchekino experiment if it can tighten the internal organisation of labour and encourage workers to combine jobs.

140. See A.Molchanov and N.Titskii, "Shchekinskii metod na zheleznodorozhnom transporte", Sotsialisticheskii Trud, 1982, No.5, pp.61-64.

141. Batkaev and Semin, op.cit., p.45.

142. Ibid., p.45.

143. L.Brezhnev, Pravda, 22/10/80, p.1.

144. Batkaev and Semin, op.cit., p.44.

145. Ibid., p.44.

146. N.P.Aper'yan, Ekonomicheskaya Gazeta, 1983, No.49, p.6.

147. Ibid., p.6.

148. D.Valavoi, A.Nikitin, V.Shvetsov, Pravda, 14/6/82, p.3.

149. G.N.Grotseskul', Pravda, 14/6/82, p.3.

150. A.Mirgaleev, Pravda, 14/6/82, p.3. See also T.Baranenkova, "Rezervy ekonomii rabochei sily", Voprosy Ekonomiki, 1980, No.5, p.55.

151. See for example, A.Aganbegyan, Pravda, 24/2/82, p.2; Trud, 12/12/82, p.3; A.Nikitin, Pravda, 1/3/82, p.2; G.Grotseskul', Pravda, 8/9/80, p.2; P.Batkaev, op.cit., p.35.

152. N.R.Melent'ev, Pravda, 14/6/82, p.3. See also Melent'ev's comments in A.Radov, (1981a), op.cit., p.2, where he complains that the combination of small wage supplements and the claw back of economised funds hinders the experiment. Also note that during the 10th Five Year Plan the Shchekino plant did not build one house or apartment for its workers because of the lack of funds. This represents a continuation and worsening of the problem noted in footnote 77.

153. Mironov, op.cit., p.2.

154. Borodin, op.cit., p.3.

155. As Mironov points out the Bashkir plant has labour costs 1/3 that of the average engineering plant but

receives the same targets for workforce reduction. Op.cit., p.2.

156. Ibid., p.2.

157. See Izvestia, 9/1/82, p.2. It is interesting to note that the largest increments for job combination, up to 50% of the basic wage, were for loading and unloading work.

158. L.V.Novozhilov, Ekonomicheskaya Gazeta, 1980, No.9, p.8.

159. Ibid., p.8.

160. G.Grotseskul', Pravda, 18/10/83, p.2.

161. G.Grotseskul', Pravda, 14/6/82, p.3.

162. For descriptions of the experiment see L.P.Khadzhinov, Ekonomicheskaya Gazeta, No.46, November 1983, p.6; G.K.Simenenko, Ekonomicheskaya Gazeta, No.51, December, 1983, p.7;

163. For example, enterprises have a degree of freedom to reduce staff using retained funds for bonuses for remaining employees; enterprises have discretion over the size and distribution of bonuses and are allowed to pay temporary bonuses; special bonuses are available for job combination and highly skilled workers, etc. See Izvestia, 2/1/84, p.2 and Ekonomicheskaya Gazeta, 1984, No.30, p.2.

164. G.Grotseskul', Pravda, 18/10/83, p.3.

165. See D.Dyker, "Planning and the Worker", in Shapiro and Godson, op.cit., pp.60-61.

166. See N.Tchitanava, Kommunisti, 3/9/78, pp.2-3. (I would like to thank R.Parsons for his translation of this article from the original Georgian).

167. Ibid., p.3.

168. Pravda, 11/3/83, p.2.

169. G.Lebanidze, Pravda, 18/2/83, p.2.

170. This is not unlike the attempts to set up "networks" by local councils in the UK, as a localised response to job losses.

171. See Sharov, Grotseskul' and Melent'ev op.cit.

172. A.Radov, Sovetskaya Rossiya, 22/7/81, pp.2-3, presents a summary of the problems citing Aganbegyan, Slepikh, Sharov and others involved either at Shchekino or elsewhere. See also Baranenkova, op.cit., p.55 and Batkaev and Semin, op.cit., p.51.

173. G.Komov, "V sochetanii s brigadnoi formoi organizatsii i oplaty truda", Sotsialisticheskii Trud, 1983, No.4, p.18.

174. Batkaev, op.cit., p.34.

175. Komov, op.cit., p.18.

176. Valavoi, Nikitin and Shvetsov, op.cit., p.3.

CHAPTER 5: ALTERNATIVE ATTEMPTS TO ASSERT CONTROL OVER THE
LABOUR PROCESS.

The Shchekino experiment and the early variants which developed from it and which have already been outlined, were not the only attempts at reform that sought to alter the ruling group's control over the process of surplus extraction. Throughout the 1970's there were a series of experimental initiatives that ran parallel to the Shchekino experiment. These were in part derived from it and were either responses to the problems it encountered or were extensions of some of its elements. Some of the initiatives were more direct attempts to solve problems that the Shchekino experiment had only indirectly tackled. For example, the introduction of technically validated norms was an indirect consequence of the introduction of the Shchekino experiment but the major aim of the experiments initiated at the Aksai and Dinamo plants. All of these experiments can be viewed as alternative attempts to resolve the problems identified in Figure 1, by tackling the central question of control over the labour process.

This chapter cannot cover comprehensively all the experimental initiatives but will consider a number of the most important that sought to affect changes in the labour process (1). The major section of the chapter will consider the 'Brigade System' of labour organisation because of its importance and the close parallels between this initiative and the Shchekino experiment, both in intention and

experience. It is however, impossible to fully cover such a major initiative as this and the chapter will therefore, trace out the origins of its major features, its development and its similarities with the other experimental initiatives only. Secondly, the chapter will consider the experimental initiatives concerned with work norms and wages at the Aksai Plastics plant, the Dinamo plant and the Volga Automobile Plant.

THE INTRODUCTION OF THE ZLOBIN BRIGADE SYSTEM IN THE CONSTRUCTION INDUSTRY.

The occurrence of labour discipline problems, as already suggested, is most acute where labour has greatest control over the nature and manner of its work (2). This is particularly the case in occupations which are difficult to physically supervise and where the pace of work is not determined to any great degree by technology. Perhaps the best example of this is the construction industry where in the early 1970's two out of every three workers were manual workers (3). The USSR has a long history of problems in this sector, absenteeism and poor discipline and work quality being perennial problems and it is not surprising that a major reform initiative was instituted here in 1970 (4). This was originally known as the 'Zlobin Brigade System', and was named after the brigade leader of the first brigade to initiate the system but later it became better known as the 'Khozraschet', or 'Contract Brigade

System'. This experiment is an interesting attempt to change the process of surplus extraction in an industry where the Shchekino system appeared to have had little success. The underlying principle of the experiment is a recognition that in the Soviet construction industry managerial control over the labour process is exceptionally difficult. Therefore, the experiment seeks to make the workforce, or small groups of workers discipline each other. The basic operation of the experiment was that a definable sub-section of a particular building project was contracted out to a brigade of workers. For example, in the initial case of the Zlobin brigade this was the work of actually constructing the shell of a building (5). The construction administration would contract to supply the workers with the necessary resources, tools and documentation and a contract would be set for the job and agreed with the brigade. Workers would not be paid any bonuses but if, in the process of construction, they could economise in terms of time, labour expenditures or raw materials, 50% of the savings made would accrue to them. Effectively the brigade can benefit from any savings it can make but by the same token any losses incurred or delays would come out of the collective rewards of the brigade (6). This was an attempt to stimulate the self-interest of brigade members and use this as a mechanism of discipline. From the outset Zlobin's brigade pledged to increase labour productivity by 25%, reduce the time needed for their particular part of the construction process by 40-45 days and reduce overall costs by 25-30,000 roubles. In fact the

initial results were even more dramatic as the job was finished 80 days early and labour productivity rose by 36%. The Zlobin brigade required only 2.34 man days per square metre of construction in comparison with 3.67 man days per metre in a traditional brigade (7). For workers in the Zlobin brigade bonuses as a result were 50% higher than in comparable brigades and as Zlobin himself points out, labour and production discipline improved dramatically (8). Absenteeism, drunkenness at work, overly long smoke breaks and general tardiness became a thing of the past in the Zlobin brigade, as workers perceived these activities to be detrimental to their own interests. Furthermore, when the brigade was over-allocated raw materials it refused to accept them as they would have to be paid for out of the brigades contracted funds and would therefore, have reduced their potential profitability. This economising attitude to raw materials is in direct comparison to the usual Soviet response to this type of situation. Normally, the response would be to accept the over-allocation, which would involve no financial penalties. The resource would then be stockpiled for later use as the enterprise or work team can confidently expect later supply problems (9). Alternatively, the resources could be utilised for barter purposes to obtain some other deficit resource (10). After their first successes the Zlobin brigade went on to reduce even further building time on their next assignment and the experiment's apparent success lead to calls for its wider dissemination within the construction industry (11).

However, very early in the life of the experiment criticisms emerged, suggesting that the experience was atypical. For example, it was pointed out that the real originators of the experiment, S.Demestyeve and V.Loholin, chose Zlobin deliberately because of his past excellent record of work organisation (12). Perhaps with lesser leadership the experiment would fare less well.

Secondly, and far more importantly, the leader of a rival brigade, which worked on the same construction project as the Zlobin brigade and was used as a comparison to illustrate the advances made by Zlobin's brigade, pointed out that the comparison was unrealistic. He argued that although the Zlobin brigade did not necessarily receive 'special' conditions they did nevertheless, get first delivery of raw materials. Also when it was realised that one portion of the work could be accomplished better with a second crane, the Zlobin brigade were able, out of their allocated funds, to obtain one. They had to pay for it but recognised the advantages in terms of cutting work time and making economies and therefore, raising their bonuses. As Zlobin's rival commented, this kind of discretion was not unfair, even though this option was not available to them, but was simply what should be normal practice. However, the problem is that ease of supply and access to both specialist equipment and basic tools is not 'normal', not only for Soviet industry but especially for the construction sector. Novokshonov points out that even the provision of basic tools, costing 20 roubles, can double

labour productivity but only between a fifth and a seventh of the normed number of tools are actually supplied (13). The point is that it may be possible to set up isolated brigades of workers who can achieve impressive results but this is predicated upon the failures of other brigades to receive adequate support. Eventually this is irrelevant to the problems facing the Soviet ruling group unless it is possible to generalise the experience and simultaneously change all work teams (14).

By early 1971 20 collectives in the Moscow area had initiated the experiment and the Construction industry, convinced of its potential, pressed for its extension. By the end of 1972, approximately 800 brigades were operating on Zlobin lines, 83 of which were in Moscow alone but this was a minute proportion of the total number possible (15). This slow dissemination is explicable by a number of further problems that emerged which either undermined the logic of the experiment or made it unattractive to workers and management alike.

Firstly, from the point of view of management there is a problem setting the experiment up. It has to be a clearly defined section of work with the correct documentation, financing and tooling. A clear idea of the schedule of work and a reasonable completion date are also essential. So too is some idea of the brigade's capacity and in the absence of branch or interbranch norms, past performance is not necessarily a good indicator. Furthermore, the original

conception envisaged the brigade not to be responsible for site preparation although some management took the short cut of including this in the contract and allowed the brigade to commence from an unprepared site. Given the potential problems of site preparation and the necessity for specialist equipment this deterred workers from switching to the system. All these pre-conditions were essential if the contract was to be concluded and problems with any element destroys the acceptability of the experiment to the workforce and overlong preparation destroys the attractiveness of the system for management.

Secondly, there was a problem about who is responsible and for how much? The logic of the experiment is that a brigade performing exceptionally badly could be left with 'negative bonuses'. However, this contradicts articles of Soviet labour law that stipulate the degree of financial responsibility working people have for their work (16). The combination of this ambiguity and the experiment's voluntary form further delayed its extension as worker's could see the potential financial problems and management could envisage themselves being placed in a no-win situation.

Thirdly, the logic of the experiment is that if management fail to supply the brigades with the necessary materials or tools then a penalty should be paid by them to the brigades. Given the general difficulties of the

material-technical supply system this obviously limits the enthusiasm of management for an experiment, the conditions of which they will almost certainly not be able to control and which by its operation may lead to automatic bonuses for the brigades.

Fourthly, the material incentives that emerged from the system are not that attractive. This is partially for the reasons already noted, that money does not have a strong incentive effect as it is not the universal equivalent. Nevertheless, the wage supplements that were paid were relatively small. Consider for example, the first two buildings constructed by the Zlobin brigade. The first was built in 155 days and resulted in average daily wages of 11.29 roubles; the second building was constructed in only 82 days but the average daily wage only rose to 11.85 roubles (17). This is hardly a worthwhile incentive as a major increase in work intensity, cutting work time by 47%, lead to an increment in wages less than 5%.

In this early period there was also some criticism of the underlying ethos of the experiment. It was thought that it would stimulate greed and poor quality work. Zlobin however, rejected these arguments by pointing out that the underlying principle of payment by results would bring benefits to everyone concerned and was not necessarily 'anti-socialist' (18). For the workforce, apart from any material benefit, there was the benefits of release from working under the petty tutelage of management thereby

increasing satisfaction. Payment by results would also resolve problems of labour discipline. Zlobin argued that what ultimately harms Soviet workers is indiscipline, idleness and the opportunity to act in a 'non-socialist' manner. For management, apart from the obvious benefits of enhanced production from a more disciplined workforce, there would be freedom from petty supervisory tasks, like checking time-keeping and daily production and quality supervision, thus freeing trained cadres for more productive work. For the state, production projects would be completed, in itself a desirable step forward, with economies in wages, labour outlays, materials and time.

In order to overcome the potential problems of slipshod work it was decided that the brigades eventual share in the economised funds should be dependent upon the quality of the work performed. This was evaluated on a sliding scale so that excellent quality work received the full 50%, good quality work 30% and satisfactory work 10% of the potential bonus (19).

In the Moscow brigades set up in this early period, construction time was reduced by an average of 23.8 days, labour outlays were reduced by 28%, labour productivity rose by 21.9% and wage fund savings averaged 6% (20). The major attractions of this experiment, having the workforce discipline itself and saving funds and materials in the process, was clearly recognised by the decree generalising the experiment (21).

By the end of 1972, 564 trusts and construction combines had switched to the new system and about 2000 brigade contracts were in operation, achieving an average reduction in construction time of between 13% and 16% (22). However, over the same time period the rate of unfinished construction projects continued to rise and pressure to resolve the industry's problems via the further generalisation of the brigade system, increased (23). By early 1973 in the construction ministry only 351 out of an approximate total of 20,000 brigades were operating on the Zlobin system. In the Ministry for the Construction of Heavy Industrial Enterprises only 358 brigades, out of a comparable potential number, were operating on the system (24). This represents a rate of transfer of less than 2%. In the Ministry of Rural Construction the percentage was even lower at around 1.5%. There was also a noted regional variation as most brigades making the transition to the experiment were either in, or close to, major urban centres, particularly Moscow and Leningrad.

This again raises the interesting question of why an experimental initiative, after initial successes and ministerial and state support, failed to be generalised. Part of the explanation for this failure is resistance to the experiment on the part of enterprise management and ministries. This is the result of the problems connected with its initial implementation, which have already been noted (25). Resistance to change at all levels of

management is perhaps a rational, if short term view, particularly if the change engenders the possibility of failure. However, more significant problems can also be identified.

SECTION 2: PROBLEMS IN THE GENERALISATION OF THE ZLOBIN SYSTEM. THE KALUGA AND OREL VARIANTS

The major difficulty with the original conception of the brigade system is that no work unit or economic unit, whether as small as a brigade or as large as an industry, operates in isolation from everyone else. In integrated production processes a wide variety of work units necessarily interrelate and the performance of the individual unit is always constrained by other units and the performance of the economy as a whole. However, the brigade system rests upon the principle that the brigade is rewarded or sanctioned for its own work, the conditions of which they cannot totally control. This problem has two dimensions.

Firstly, the major problem is the question of supply. The contract entered into by brigade and management is predicated upon expected future supply. The job's specification, the order of work and completion date and the workers' acceptance of the contract is all undertaken on the assumption that the necessary supplies of raw materials, tools, energy, plans and blueprints and whatever else the job requires will actually be delivered and delivered on time. If any of these elements are breached, no matter how hard the brigade works, their efforts will be irrelevant as completion dates will be missed and the share in economised funds will be foregone as a consequence. In

Lvov, for example out of 18 brigades switching to the system, 10 failed to meet their contracts and returned to the old way of working, not because of failings in their work but because of supply difficulties (26). In Kursk in 1975, only 32 out of 70 brigades successfully completed their contracts because of supply difficulties, and even in the best brigades supply conditions were described as chaotic (27). Similar examples are cited by a variety of sources (28).

In the face of these supply difficulties one other possibility is that brigades will turn to their own production of either intermediate products or tools. This type of do-it-yourself activity is self-defeating as it is wasteful of the brigade's time, leads to poor quality work and non-standardised items which are eventually more costly to produce in this individual form (29). Non-delivery is not the only problem because late delivery can destroy work patterns and lead to arhythmic working which then disrupts the brigade's efforts. Without stability in supply workers will be reluctant to accept brigade contract working because it makes their wages/bonuses dependent upon forces which ultimately they cannot control. Far better to accept a slightly lower, yet guaranteed wage, (particularly if the material incentives are small and weak due to the nature of money and the lack of consumer goods) and allow the headaches involved in supply failures to pass to lower level management (30). There is really no incentive for workers to become involved with responsibilities that have

traditionally fallen on someone else.

Secondly, the original conception of the experiment identified one section of an otherwise integrated construction project and set up a contract for its completion. In the case of Zlobin's brigade, as noted, they were responsible for the erection of the building's external shell and then other work teams of plasterers, electricians and finishers would complete the building. This sets up the obvious problem of dislocations between the work teams. For example, Zlobin's brigade constructed their portion of an apartment building 100 days early but the building remained unoccupied for a similar length of time because of shortages of finishing workers (31). This again indicates that these experimental initiatives are irrelevant unless generalised, in the first instance around a particular construction site or in a particular region.

Just as problems in the operation of the Shchekino experiment gave rise to variants, the same thing happened with the brigade system. In order to overcome the difficulty of dislocations between brigades, a variant of the Zlobin system was established by L.Senatov at Kaluga (32). The organisation of work here was different in that all the brigades within the combine simultaneously transferred to the contract system and individual brigade success was now dependent upon the success of all brigades. This, inevitably, produced greater demands for correct phasing and pace of work. In order to maintain cohesion

and discipline the brigades at Kaluga were co-ordinated by an elected council of brigade leaders (33). At Kaluga the initial experience was promising with construction time falling from 105 to 75 days, costs per square metre were cut, the quality of work improved and average wages rose. Furthermore, the Kaluga collective weeded out drifters, loafers and drunks throughout all the brigades and substantially improved labour discipline and cut labour turnover. This new collective form of contract appears very desirable as it reduces the problems of integration but it also generates different problems, concerned with the size and co-ordination of brigades, that will be examined later in this chapter.

A further problem, concerning the time horizon over which planning decisions are made, gave rise to both a further variant or addition to the Zlobin system and an attempt to reorganise construction at a city or regional level. This was initiated at Orel in April 1973 and was known as the Orel Continuous Planning System (34). The basic principle behind the system was the recognition that at a local level construction projects were the responsibility of a large number of clients. In Krasnodar in the mid-seventies, for example, there were 98 separate construction clients (35). This leads to the spreading of resources, needless duplication and little co-ordination between the different ministries eventually contributing to the high levels of incomplete construction projects (36). Therefore, the intention at Orel was to reorganise the administration of

construction and place it under a unified body, in this instance the City Soviet Committee for Capital Construction. This would then provide continuous planning of the city's construction projects and continuous flow construction with unified design and construction responsibilities. The idea was to plan construction projects over a rolling or continuous period, in order to concentrate resources in the short term and actually complete projects and provide continuity into the future (37).

It was suggested that the introduction of this system would reduce the number of building sites by between 33-40%, with a consequent reduction in the labour shortage and achieve cuts in construction time of between 15-20% (38). Continuous planning would assist in the reduction of idle-time generally by cutting the period between projects and it was estimated that a 50% cut in this could result in an increase in the value of construction amounting to 2.5 billion roubles per annum (39).

Implicit in this scheme is better labour organisation provided by the brigade system. However, the intention was that the system of continuous planning should be applied directly to the brigades themselves. The reason for this is that it is counter-productive if brigades complete contracts with great speed only to find there is no further scheduled work for them. Therefore the intention was to apply continuous planning to brigades and provide them with

plans stretching into the future perhaps two to five years (40).

In fact attempts to generalise the Orel system, on both levels of operation, have proceeded very slowly for two major reasons. Firstly, the narrow departmentalism of ministries has led to reluctance on their part to surrender control over building projects to any unified body. Secondly, continuous planning has proved very difficult to implement at any level. This is due in part to the sheer complexity of the task but this is compounded by the all-pervasive uncertainty brought about by plan instability from above (41). The problems involved with coordination and experiments across ministries will also be returned to later.

Further problems can be identified that affect both the workers, who have to be encouraged to adopt this system, and management, who are responsible for establishing the conditions for transfer, and these retard the experiment's dissemination. Sevastyanov suggests that 30-40% of the reluctance can be attributed to the workforce, who are dubious about the advantages for them. The balance is due to managerial reluctance because of the integrated nature of construction and therefore the difficulty in setting up and defining brigade contracts plus their fear of failure (42).

There are problems regarding the status of the brigades

themselves. Their initial status was both temporary and voluntary and the choice of making the transition would be determined by localised circumstances. This added to the instability of existant brigades and added no impetus to the establishment of new brigades and the generalisation of the system. Furthermore, as with other experimental initiatives, complaints were raised regarding the complexity of the paperwork necessary for the transition to the experiment. As Turbanov points out, it could take an official up to 40 days to process the necessary papers to transfer a brigade onto a contract and it was not inconceivable that the task assigned could be completed before the paperwork (43). Another source suggests that it could take two specialists up to a month filling in the 24 forms necessary to transfer to the contract system (44).

However, perhaps the major problem, as brigades actually transferring to the system have complained, is that the experiment was not carried out in sufficiently stable conditions either for all the benefits to emerge or for other brigades to be encouraged to follow their example and transfer to the contract system. This has a number of aspects.

Firstly, successful brigades were often not allowed to complete the project they were working on but were shifted, by management, from project to project and used almost as construction 'trouble-shooters'. This may make sense from management's point of view, using a cohesive, well

disciplined brigade to cover problems, particularly as management are concerned with overall plan fulfilment and not just isolated success in one or two brigades, but it destroys the logic of the experiment and will deter brigades from changing to this form of working (45).

Secondly, even when a brigade is allowed to finish a particular project there is no guarantee that the next project will be a contract of the same type. For example, Zlobin's brigade was switched from the construction of apartments to school building to house construction and so on, thereby losing any advantages to be gained from specialisation (46).

Thirdly, there was no guarantee that norms would remain constant and for Zlobin's brigade they were continually revised upwards until eventually average wages began to fall as contract time periods became tighter (47). Once again a contradiction emerges between the operation of an experiment and the logic of Soviet planning practice and this requires some explanation.

The logic of this experiment, like the Shchekino experiment, is to expose slack labour organisation and indiscipline, but here the novelty is to pass the onus for controlling this onto the workforce itself. In the case of Zlobin's brigade the original contract was set up without technically validated branch or inter-branch norms (48). The original calculation was based upon past practice and

'rules of thumb'. The brigades' actual performance would allow management to evaluate the accuracy of the original contract because any time saving could only emerge on the basis of management's mis-estimation of the brigades' capacity. However, this sets management a considerable dilemma. Logically once this slack is identified they should set the brigade a new contract for the same job which reflects the new tighter work organisation. This would have the dual attraction from management's viewpoint of encouraging specialisation and further moving the brigade towards its actual capacity by raising work intensity. From the brigade's point of view as management's assessment of their capacity becomes more accurate the potentiality for easy bonuses diminishes and only by increasing their work intensity even further can bonuses be earned. Clearly workers will resist contracts for the same job which demand an ever increasing work intensity with diminishing possibilities for rewards. This may well explain why management shift successful brigades from one type of work to another. In this way they can capitalise on the increased organisation and tighter labour discipline and at the same time disguise the increasing intensity of work they are demanding. The cost of this strategy for management is the loss of the advantages of specialisation. It should be remembered that both workers and management will learn from their experience and the net effect will be a growing reluctance on the part of the workforce to accept more restrictive contractual terms. As with the operation of the Shchekino experiment, eventually a ceiling will be

reached and the possibility of further success will not come from internal factors but from outside the immediate control of the brigade, for example, re-tooling, technological change etc.

Whatever strategy management adopt the overall result will be that the experiment will have diminishing success. Planning from the achieved level may well be necessary but it will ultimately destroy the will to implement the contract brigade form of organisation and the in-built slowing of its momentum will discourage those brigades that have transferred to the system. Once again stable plans and norms are essential in order to maintain the momentum of the experiment and to encourage its generalisation. However, central planners and ministries can neither provide these conditions nor allow lower echelons of management the degree of autonomy necessary to allow them to establish them.

By the middle of 1973 6,000 brigades had transferred to the Zlobin method of working. These brigades were achieving labour productivity figures approximately 20% above comparable brigades and had cut construction times by between 13% and 16% (49). Although this appears an impressive number it should be noted that they represented only 2.4% of the 250,000 brigades operating in the construction industry (50). Furthermore, Soviet commentators have noted that these figures are misleading as many of the brigades had transferred in name alone and

that in reality both the ministry and local management were resisting the implementation of the system (51).

As a consequence of the problems that had emerged and the criticisms levelled at the experiment, new regulations for the transfer of brigades to the system were introduced (52). The major thrust of the new regulations was to introduce an extension of the Kaluga variant, which made it necessary for all brigades working on a particular project, to transfer to the contract system. The intention of this was to stem the problems of dislocation between contract and non-contract brigades. The hope was that if all brigades were operating on the same system then all wages and bonuses would be linked to the completion of the project and all round economies in time, labour and materials would be achieved. It should however, be noted that this condition raises a number of problems. Firstly, it increases the complexity of management's task in setting up the contracts. Secondly, the possibility of failure for both management and the individual brigades is increased as all the brigades are now dependent upon one another. Formerly local management could assist the contract brigade by giving them priority and switching resources to them at the expense of the non-contract brigades. Management would do this because the success of these brigades would reflect favourably on them. Also the contract brigades could be used for special projects and by keeping the workers in these brigades within the terms of the contract, management would be able to retain them. (Remember it is likely that

the 'best' brigades would be transferred to the system first). The remuneration of workers in non-contract brigades would not necessarily be impaired by this action. This would no longer be possible however, if the new regulations were strictly adhered to, as all brigades would have to transfer to the contract system and therefore, all brigades would find their rewards linked to performance. This raises a series of pressures on management from below. All brigades would now demand the opportunity to fulfil contracts and if any brigades were discriminated against, in terms of access to resources, then these workers would find their rewards reduced, even though their work intensity may well have increased (at least in periods when resources were available). These workers would then be encouraged to move to different enterprises where work intensity was not so high. Furthermore, the new instructions also increased the pressure on management from above, as ministries were now given the task of constructing plans for the conversion of all the brigades under their jurisdiction, onto a khozraschet basis. Management's response was to increase the introduction of the brigade form but in a formal and often empty manner.

For example, in 1976 at the North Caucasus Construction Administration Trust No.5, local management under pressure from above, introduced 21 contract brigades out of a total of 69 brigades. Only two of these brigades fulfilled their plan and only then when their targets had been reduced (53). The reason for this is a good illustration of the

problems. The trust's plan for 1976 was 51% up on 1975, there was a labour shortage of 1,000 workers and only 70% of planned supplies were actually delivered during the year (54). By introducing brigades but failing to undertake the necessary preparation, management were able to formally satisfy ministerial pressure but unable to reap the benefits of the system. By the late seventies over 30% of brigade failures were attributed to failures in supply (55) and as Bunich points out, in 1977 300 brigades reverted to the old form of working because of the lack of external support (56). Table 46, indicates that the pressure from above led to a rapid increase in at least the nominal dissemination of the experiment (57).

TABLE 46: Brigades in the Construction Industry Operating on the Zlobin System.

1972	1973	1974	1975	1976
200	9,000	16,000	40,000	43,000

Source: V.Sevast'yanov, Kommunist, 1977, No.7, pp.37-46.

Nevertheless, in 1976, Soviet authors assessing the six year period over which the experiment had operated, concluded that the experiment was a success and that in the contract brigades construction time had been reduced by 17-20%, overall costs were down by 3-4%, and labour productivity had been increased by 4% (58). Clearly the advantages of the system, notwithstanding the problems outlined above, had been maintained but at a declining rate. Gonchanov points out, that in Volgograd province for

example, the transition to the brigade contract system was moving ahead rapidly but only on paper as construction plans are still unfulfilled (59). Furthermore, many of the brigades are very small, leading to large numbers of brigades with complex co-ordination problems but very little positive economic effect (60).

From the point of view of workers the transition to the contract system was not necessarily reflected in material rewards. In 1978, Grinko calculates that contract brigades exceeded the average output of ordinary brigades by 30% but their average earnings were only 2.5% above the rest (61).

Another significant feature that needs explanation was the differentiated diffusion of the system between different branches of construction. For example, over the course of the 10th Five Year Plan it was expected that 70-80% of all housing construction would be completed by brigades but only 20-30% of industrial construction (62). This feature and the factors that gave rise to it, are an interesting precursor of problems that were to develop later when attempts were made to generalise the experiment throughout industry. The different degrees of diffusion can be explained by the nature of work itself in the housing and industrial construction sectors.

In house construction the work tasks are relatively simple and tend to involve small work groups. Even if the overall project is large, for example the construction of a number

of apartment buildings on the same site, the total workforce can be easily separated into coherent, parallel work teams. This can be achieved either by grouping workers horizontally across a particular skill group, for example all plumbers, all electricians etc. Or it can be achieved, as in the Kaluga variant, by grouping workers laterally. For example, all the different skilled workers operating on a particular building would form one work brigade and this would comprise plasterers, plumbers, electricians etc. In this way the introduction of brigade contracts and the coherent definition of brigades, is relatively easy for management and easily identifiable for the workforce. (This of course is not to minimise the problems already noted in the operation of these brigades once established).

However, on an industrial construction project the total number of workers is liable to be relatively larger. Secondly, the complexity and specialist nature of industrial construction, is likely to involve a wider variety of skilled workers and specialisms. This will lead to a high degree of integration and interdependence between workers on the whole project (63). Identifiable tasks suitable for brigade contracts will be more difficult for management to define and workers will be reluctant to accept that their remuneration should be based upon tasks heavily dependent upon the performance of others. The only possible way forward for management is to incorporate into the brigade all the members of the construction project but this then leads to problems regarding the size of the

brigade that defeats its object of providing closer control over the activities of workers and linking their rewards to effort. These peculiarities of industrial construction explain the relatively slower dissemination of the experiment in this sector and provide a background for assessing the fate of the experiment when attempts were made to generalise it throughout the whole of Soviet industry.

SECTION 3: THE EXTENSION OF THE BRIGADE SYSTEM TO INDUSTRY.

In the early seventies the apparent success of the brigade system in construction, coupled with the similar experience of brigades in agriculture (64), encouraged the ruling group to extend the initiative to industry. Even if the experiment had its own problems and had not been, as yet, fully generalised within construction, it nevertheless offered the possibility of improving industrial labour discipline and, as a consequence, labour productivity. As early as 1973 the brigade form was introduced mainly into machine building enterprises (65). By the mid-seventies the system had been introduced into a variety of industries. For example, it was introduced into the Timber industry in August 1974, where it was used specifically to encourage workers to be less wasteful by giving bonuses for good quality work completed on time (66). The result was that labour discipline indicators improved and wastage fell from an average 10% to 1.2% per shift (67).

However, in some respects this industrial example is atypical. As well as the more general problems already noted in this chapter, the transfer of the brigade system into industry posed a series of specific problems, that were similarly grounded to the problems in industrial construction. These problems however, were more pronounced because of the nature of the Soviet industrial labour process.

Firstly, the degree of integration of work activities, both within a particular enterprise and between enterprises, exceeds that in the construction sector. The production of almost any industrial product is the culmination of an integrated and mutually interdependent chain of work processes involving a large number of people. In flow production plants the integrated activities of hundreds of people produce the final product and it is almost impossible to separate out specific work tasks that can then form the basis of the brigade contract. Even if this is possible the success or failure of a particular brigade will be totally dependent upon the success or failure of the brigade performing the immediately preceding task. In these conditions we may expect the workforce to be reluctant to transfer to the brigade system. Management will find the difficulty of the task of identifying and setting up coherent contracts will act as a disincentive to the introduction of the system. Furthermore, the transition may well be eased if the work team carry out a standardised section of the production process perpetually. However, if their work is contingent on the needs of other sectors and changes, perhaps on a daily basis, either because of small batch production or because of the uncertainties of repair work etc, then it will be very difficult to implement the system.

Secondly, linked to the first point, industrial production in the USSR takes place in enterprises and plants, which

are large. They are bigger for example, than their western counterparts (68). The sheer size of the workforce can militate against the implementation of the brigade system because a choice has to be made either to set up a large number of brigades, with the consequent problems of co-ordination and contract specification, or brigades will have to be very large and thereby sacrifice the self-disciplining benefits of the system.

Thirdly, industrial production takes place in a physical environment that is more amenable to control hence the existence of shift working as the norm. This raises a further problem of co-ordination of brigades over time. Should separate shifts, operating with the same plant and equipment, constitute separate brigades with separate contracts or should the brigade and its contract be defined across shifts making them part of the same brigade? The former option heightens the degree of dependence between the two shifts whilst the latter option raises again the question of co-ordination.

Fourthly, the composition of the industrial workforce comprises not only basic production workers but also significant numbers of auxiliary and repair and service workers (69). The question then arises how are these workers to be integrated into the system? Should they be part of basic production brigades, as they contribute, however indirectly, to the finished product or should separate brigades be established for them? Is the

composition of brigades to be vertical through occupations or horizontal through production?

Given the integrated nature of industrial production, described above, a formal structure of brigade organisation has emerged that reflects plant and association structures. In the first instance the decision to change to the brigade system comes from a shop floor workers meeting and has to be ratified by the shop's chief and trade union committee (70). The brigade is eventually established by the enterprise director and the enterprise trade union committee. The brigade leader is appointed by the shop chief on the recommendation of the shop foreman. Hence the brigade leader, although not a member of management is indirectly, their appointee. Each brigade then elects a council usually of about ten members, which must comprise a production foreman and party and trade union representatives, with the brigade leader as chairman (71). The balance of the membership comprises top production workers. The role of this council is to review output norms, to enforce labour discipline, to supervise product quality and to ensure the fulfillment of output and productivity plans. The brigade council is also responsible for the calculation of the coefficient of labour participation (Koeffitsient trudovogo uchastiya) or KTU which is used to calculate the individual worker's bonuses and is explained in more detail below. The brigade council is also responsible for co-ordination with other brigades, organising socialist competition and the appointment of

mentors for young workers. Furthermore, the brigade council is responsible for the allocation of labour within the brigade and had the right to accept or dismiss workers and to regrade them as they either upgraded their skills or undertook multiple functions (72).

Above the individual brigade council is a council of brigade leaders that is responsible for the co-ordination of brigades within a particular shop or plant (73). The responsibilities of this layer is to oversee the work within the whole shop or plant and to co-ordinate the brigades accordingly. It also considers plans for future production and retooling or renovation of the shop.

Where brigades are operating in Associations then two higher level bodies are established. The Association's Brigade Leaders Council comprises the chairmen of all the shop or plant Brigade Leaders Councils and this elects a presidium that deals with daily matters. Both the chairmen of the highest body and the presidium have to be approved by the enterprise director. These higher bodies are responsible for the overall co-ordination of the brigades and deal with any inter-brigade conflicts. Meetings at this level are closely integrated with plant management and the enterprise director participates directly and once decisions are made they become applied to the whole Association (74). This integration of brigades into enterprise management is claimed to represent a democratisation of the planning and production process but

the claims for this are an exaggeration given that all the participants are either directly or indirectly management appointees and the range of their deliberations is strictly delineated.

What was the impact of this new form of organisation in industry?

Burenkov, describing the 80 or more brigades established in machine building plants in the Sumy region in the period 1974-1976, points out that they were originally based upon single occupations (75). However, over time it was found necessary to merge these brigades into all-purpose or integrated brigades, the average size of which rose as a consequence, from approximately 15 to 75 workers (76). At the Kaluga Turbine Plant over a broadly similar period, contract brigades were also introduced to replace the individual piece-work system that had operated previously (77). The contract system, in both examples, operated in much the same way as it had in construction. A contract was defined with management that specified the total value of the work, a completion date and targets for economising on materials and tools. Management committed itself to provide the necessary raw materials and tools and 50% of any savings accrue to the brigade as bonuses, with higher bonuses for high quality work.

Consequently the brigade was paid on the basis of the final results it achieved collectively but this should not be

seen as an egalitarian experiment designed to level wages, even within the individual brigade. The overall intention of the brigade system is to link work performance more closely with rewards and the collective discipline of the brigade is seen as the mechanism to achieve this. Centrally determined wage normatives, however 'scientifically' derived are viewed by Soviet economists as being too inflexible and far removed from actual work performance, to act as either an incentive or as a disciplining mechanism (78). Consequently, the brigade form of organisation provides a desirable intermediate administrative link that provides a discipline mechanism over production, absenteeism, etc but also a potential means of establishing a closer linkage between work and rewards.

The way this was to be achieved was that workers in brigades would find their wages calculated on the basis of three elements; firstly, their skill grading or wage category; secondly, the number of hours they worked; finally, their coefficient of labour participation, the KTU mentioned above (79).

For each brigade working on a contracted task a collective bonus fund is established and the KTU is used to distribute these funds amongst the brigade members (80). The KTU for each worker is established by the Brigade Council and is a reflection of the individual's contribution to the work of the brigade over the month. The minimum value of the KTU is zero, which means the worker receives nothing but the base

wage. Any value above zero, up to a maximum of two, reflects the workers contribution either through job combination or high quality work etc. The intention is therefore, that centrally determined wage categories will determine the basic wage but over and above that work performance, evaluated by those most able - the brigade, will be determinant of wage supplements (81). As Parfenov points out, without the use of the KTU the loafer will be paid the same as the diligent brigade member and the incentive and disciplining effects of the brigade system will be lost (82).

As Mokin points out, with regard to a machine building plant in Yurga which transferred to the brigade form of organisation, the operation of the system will lead to the number of workers in the brigade being adjusted downwards. Once the overall wage is calculated and the job specified it is in the brigades self-interest to reduce their numbers and thereby increase their average wage (83). The brigade system operates in this respect as a shop-floor level, Shchekino-like, initiative but with the onus being passed directly to the workforce itself to reduce the numbers involved in any contracted task. For example, Baranenkova's analysis of ten contract brigades at the Gomesel'mash Production Association showed that in the first quarter of 1979, compared with the same period in 1978, the size of the workforce had been reduced by 9.1% but output per worker had risen by 13.2% (84). Gavrilov, calculated that if the engineering industry could increase the proportion

of workers on the brigade system from 39% in 1979 to 75% in 1985, then 100,000 workers could be released in engineering alone (85). Furthermore, if the system allowed a streamlining or removal of some managerial functions, like norming, quality control, etc, then even more management staff could be released.

The brigade system, like the Shchekino experiment, also encourages workers within the brigade to master second or third occupations. At the Yurga plant for example, over 300 workers acquired second or third skills which enabled them to cover potential gaps in the brigade's labour supply and assists in the completion of contracts on time (86).

The operation of the experiment over this early period, in the three examples cited, led to favourable increases in output and labour productivity and labour discipline indicators showed similar improvements. At the Kaluga plant the introduction of the brigade system lead to annual labour productivity increases of 10%, labour turnover was reduced to a quarter of its former level and from 1976 to 1980 the number of counter-plans generated in the plant rose from 186 to 300 (87). At the Frunze bicycle plant, after the implementation of the brigade system, labour turnover was reduced and labour discipline infractions fell from 30-40 a day in 1975 to 3-4 a day, in 1980 (88). One of the ways this was achieved was that the Brigade council closely vets job applications, particularly from former employees and they are only started if they are accepted by

a specific brigade. The consequence is that at the Yurga plant in 1970, it took 850 norm hours to produce one loader/excavator yet by 1976, as a result of the tightened labour organisation this had been reduced to 108 norm hours (89).

The experiment was not only introduced to basic production but also, for example, at the ship repair yards at Astrakhan (90). Here the brigade system was specifically introduced in an attempt to increase work capacity, as the yard's planned output was increased from the repair of four tankers to the repair of seven tankers with no increment to manpower. The workforce was split into two portions. The first comprising 23 workers organised into two brigades completed 41% of the work. The second portion of the workforce comprising 47 workers completed 59% of the work. The positive results of the brigade system can be seen in the comparison and are attributed particularly to multiple jobs in the brigades and eventually the whole task was completed in 4.9 months instead of 5.5 (91).

These examples of the successful implementation of the experiment in the period up to 1977/78 led to approximately 160 industrial enterprises organising on the basis of the brigade system (92). However, these early successes need to be qualified. The usual problems of supply disruptions, plan instability and poor preparation for the experiment are bemoaned even in these successful instances. However, new problems also emerged. For piece-rate workers the

introduction of the experiment marked a transition away from the old system of 'profitable' and 'unprofitable' work (93). In the new circumstances all work became necessary and equally important because bonuses would only be paid if the whole brigade fulfilled its collective obligations within the contracted time period. For some experienced piece-rate workers this represented a levelling down of wages and they resisted the implementation of the scheme. As a consequence of these difficulties the system was spreading slowly. For example, a survey of 200 Industrial enterprises in Minsk and Vitebsk showed that in 1975, only 28% of the workforce was organised in brigades but by 1977 this figure had only risen to 33% (94). Furthermore, at a fifth of these enterprises there were no brigades at all (95).

Nevertheless, the desirability of the brigade contract system and the intention of the ruling group to speed up its extension it was confirmed by the planning resolution of July 29th, 1979 (96). As already noted, this resolution formally drew together a number of measures, drawn from the experience of a number of experimental initiatives. In this resolution ministries, departments, associations and enterprises were all instructed to develop and implement the brigade form of labour organisation and it was intended that this would become the basic form of labour organisation during the period of the 11th Five Year Plan (97).

The resolution also formalised the role of the brigade council, giving them the right to determine wages and bonuses on the basis of the brigade's collective work results and an evaluation of the individual worker's contribution. They were also given the right to upgrade or change the wages of any worker who undertook a combination of previously separate jobs, who improved their skills, who learned additional skills or who consistently produced high quality work (98). The overall aim was to encourage the wider introduction of the system and thereby reap the benefits of improved labour discipline and productivity.

By the end of 1980, eighteen months after the implementation of the planning resolution, 1.2 million brigades had been formed, encompassing 12 million workers and it was hoped that the number of brigades would have risen to 1.5 million by the end of 1982 (99). However, as Table 47 illustrates, the rate of dissemination has not been as rapid as was hoped. By 1982 the total number of brigades operating in industry was 1.37 million and although more than 15 million workers were organised in brigades the statistics are misleading and need considerable qualification.

Although the number of brigades in operation is a useful index of the dissemination of the system there are also qualitative aspects to be considered. The experience gathered throughout the period of operation of the system

TABLE 47

THE DEVELOPMENT OF BRIGADES IN SOVIET INDUSTRY

	Number of Brigades (000's)		No. of Workers in Brigades (000's)		% of Workers in Brigades	
	1981	1982	1981	1982	1981	1982
Total	1,257	1,377	13,562	15,404	52	59
Basic Production	933	1,007	10,322	11,588	59	66
Auxiliary Production	324	370	3,240	3,816	38	45
Integrated Brigades	538	604	7,064	8,220	52	53
Specialised Brigades	719	773	6,498	7,184	48	47
Brigades on Khozrashchet	92	137	1,252	1,949	9.2	12.7

Source:- V. Svirchevskii & D. Nikol'skii "Razvitie brigadnoi formy organizatsii i stimulirovaniya truda v promyshlennosti, "Vestnik Statistiki, 1984, No. 2, p.16.

suggests that if the maximum benefits are to be attained from the system, the optimum brigade form is that of a complex integrated brigade, where workers of differing specialisms are combined across two or three shifts, to complete from start to finish some section of the manufacturing process (100). The brigade should be big enough to accomplish this end, without being over large. Ideally the brigade should be working solely on a single identifiable task on a khozraschet basis and the whole brigade's performance should be linked to final results (101). Individual remuneration should be based upon the individual's work performance reflected in the KTU (102). In this way the brigade is both encouraged and able to reduce both inter-shift and intra-shift idle time and this leads as a consequence, to the full utilisation of the plant and equipment at their disposition. Furthermore, it will encourage workers to master and combine additional skills and the brigade need never experience disruptions because of shortages of the necessary skills. The net result should be increased labour discipline, output and productivity.

However, in reality the 'actually existing' brigades fall short of this ideal type and the system has been implemented with considerable unevenness. Firstly, the size of brigades has varied widely and there has been concern expressed that 32% of brigades have five or fewer members (103) and 70% have ten or fewer members (104). At the other

extreme there are plants where the average brigade size is one hundred or more workers and where the brigade is simply all the members of a shop or a shift (105). Whilst it is recognised that specific production conditions will determine the precise size of the brigades, Soviet sources agree that these extremes are undesirable. The small brigades fail to obtain any of the advantages from increased machine utilisation or job combination and because of their necessarily large number, cause co-ordination problems and this increases the likelihood of failure. The large brigades are unwieldy and are not cohesive internally and therefore they represent hardly any change from the previous situation. Estimates have suggested that the optimum size is somewhere between 40 and 60 workers (106). However, as the figures in Table 47 indicate the average size of brigades is much smaller and only rising slowly from 10.78 in 1981 to 11.18 in 1982.

The balance between specialised, single shift brigades and complex, integrated brigades has also been changing slowly. In 1980 for example, at the Kaluga plant 63% of the workforce were operating in specialist brigades (107) and in industry as a whole they predominated (108). By 1982, as Table 47 indicates, integrated brigades, although smaller in absolute numbers, encompassed a larger proportion of the workforce. This is as would be expected, but it should be noted that their average size is still very small, at only 13.6 workers.

Furthermore, there have been continual complaints in the Soviet literature that many of the brigades that have been created are brigades in name only (109). For example, one study of the brigade system in enterprises of a variety of ministries, showed that they had overfulfilled their plans for the creation of new brigades but labour productivity had only risen by between 0.5% and 1.2% as a consequence (110). This seems to cast considerable doubt on the efficacy of the brigade system but the real reason for this type of result emerges from a further study of brigades in the machine building ministries, where only a third of the brigades were actually paid according to final results (111). In ship building and repair the figure is slightly higher at 50% (112). Consequently, the introduction of brigades in these two sectors, in the majority of instances, has brought about no significant change. According to the information in Table 47, in 1982, less than 13% of the brigades were operating on khozraschet principles. As Soviet sources argue, this pro-forma adoption is inadequate.

This has a further dimension that is amply illustrated by the situation in Magnitogorsk. Out of the 2,272 brigades operating there, which account for 62% of the workforce, only 900 brigades are paid on the basis of final results but more significantly, only 238 brigades utilise the KTU to calculate the individual worker's bonuses (113). If all the brigades are approximately the same size this implies that the full system only operates for a little over 10% of

the workforce. Furthermore, at enterprises of the machine building ministries the collective bonus is distributed to brigade members by use of the KTU for only 16% of workers (114). Even more extreme is the example of the Lipetsk tractor plant where there are 600 brigades in operation but not one is operating on khozraschet principles and in fact all workers are paid individually, on exactly the same basis as previously (115).

What is being suggested is that the figures presented on the creation of brigades are misleading and in fact the adoption of the brigade system may well mean little more than cosmetic changes to plant labour organisation. This then explains the limited impact on productivity and output figures over this period when apparently significant changes were taking place (116).

There are further problems because the experiment has been disseminated disproportionately between basic production work and auxiliary work, as illustrated in Table 47. It is to be expected that the brigade system will be easier to introduce to basic production work than to auxiliary, service and repair work. The reason for this is that basic production tasks are more amenable to coherent definition into brigade tasks, unlike repair work which by its nature, is more uncertain. Nevertheless, it is in the auxiliary sector that the brigade system is most needed to resolve the problems noted earlier (117). Specialist auxiliary, service and repair brigades have been set up at a number of

plants. The Togliatti car plant and the Volga Automotive Plants are the best known examples, where the centralisation of repair and service facilities has led to dramatic improvements in productivity etc (118). In the shipbuilding industry the introduction of multi-purpose, auxiliary brigades has led to 20%-30% increases in the productivity of auxiliary workers and the downtime of malfunctioning equipment has been reduced by 30%-35% (119). It is interesting to note that while the shipbuilding industry intends to have 88% of its basic production workers organised in the brigade system by the end of the eleventh five year plan, the comparable figure for auxiliary workers is only 60% (120). However, generally even where specialist auxiliary brigades have been set up the proportion operating on *khozraschet* is much lower than the overall industrial average. Furthermore, the introduction of the brigade system has not been uniform across all industrial branches, reflecting differing degrees of support and planning at ministry level (121).

More significantly, even where brigades are fully operating on the *khozraschet* system, concern has been expressed regarding the preparations for implementing the system, the manner in which contracts are established and the internal organisation and management of the brigades. This has a number of aspects.

Firstly, as already noted, to obtain the optimum results the brigade requires a stable plan of assignments over a

period of time, ideally five years but at least two years. Apart from the operational desirability of this, in cutting idle time, it also contributes to the cohesion and stability of the brigade. However, approximately two thirds of the brigades do not even have an annual plan (122). As a consequence it is unsurprising to find that brigades only work on contract work for an average of 60% of the time, the balance is either idle time or due to management redirecting them to other tasks (123).

Secondly, short term planning and organisation is also a problem. Lanshin has pointed out that the internal organisation of brigades is often chaotic and during time spent on contracted work no work schedules exist. This has two repercussions. Firstly, if the brigade is inadequately organised internally the KTU becomes meaningless because without adequate records and work schedules it is impossible to measure or record individual participation in the brigade's tasks. Secondly, if the KTU is non-operable the remuneration of the brigade will be based either upon allocation of the collective bonus on egalitarian grounds or it will be allocated on the basis of some other indicator. For example, the wage category or skill grouping used for basic wages will be applied to the collective bonus as well. If either of these two eventualities arise then the intention of tying work and rewards through the brigade system is undermined (124). What it degenerates into is a form of perpetual storming by the brigade's conscientious workers, where workers will take on

additional tasks to complete work. This situation cannot be sustained over time and the brigade will disband and revert to the old form of working. Furthermore, there is often haphazard co-ordination between brigade members and the work assignments with skilled workers carrying out manual tasks simply to get them done (125). This represents a misuse of skilled labour.

Thirdly, the establishment of contracts is often carried out in considerable ignorance and uncertainty which leads to meaningless contracts and almost certain failure for the brigade, demoralisation and return to the old system (126). This action amounts to little more than management attempting to shift responsibility onto the workforce. Lanshin points out, that out of 40 enterprises investigated, 30%-50% of the necessary documentation, blueprints, designs etc., were absent and the delivery schedules for 30%-40% of the necessary equipment was unknown (127). Nevertheless, contracts had been established and failure to fulfil them, in most instances ascribed to supply failures or plan instabilities after the contract was determined, undermines brigade confidence and slows the dissemination of the system.

Fourthly, problems can be identified within the leadership of brigades themselves. Initially brigades were headed by exceptional production workers (cf. Zlobin), but if the experiment is to be generalised then the necessity arises for many more brigade leaders. At some plants, particularly

where a whole shift or shop has been turned in a formalistic way into a brigade, it has been suggested that foremen should become brigade leaders (128). This has the disadvantage that it destroys the foreman's function as managerial representative on the shop-floor (129). The responsibilities of the brigade leader function involve technical, economic and engineering skills and the calibre of brigade leaders has caused concern. Lanshin points out that the proportion of brigade leaders with secondary education has risen from 27% to 37%, over the period from the mid-seventies, but only approximately 10% of the rest are studying to upgrade their qualifications (130). Kalandrov points out that it was difficult to recruit the right kind of worker for the brigade leadership function because the rights and duties were ill-defined and, particularly in khozraschet brigades, the rewards are inadequate for the additional responsibilities (131). This is a critical problem because the brigade leader in this system has a pivotal role in terms of both the plant's overall organisation and in controlling production. Furthermore, as brigade leaders point out, whilst they are subject to discipline from above, and complaint from below, they have very little sanction over the actions of their superiors (132). Therefore, it is a role with considerable responsibility but little power or reward.

A further related problem is the relationship between management and the brigade leader, the Brigade Council and the Brigade Leader's Council. In the plants that have

successfully implemented the system there is a degree of overlap between managerial and brigade council functions. Also between Trade Union and Brigade Council functions. Furthermore, the addition of the Brigade Councils and the Brigade Leader's Council, although it is claimed to streamline some aspects of production administration, does add another tier of bureaucracy alongside the management, party and trade union hierarchies within the plant. The implementation of the system also begins a process of reorganisation of the relationship between management and the workforce, as management now have to negotiate with the brigades rather than simply giving them orders (133). How far this has brought real change is dubious because, as noted above, few brigades operate on the full system.

Overall, management tend to resist the full implementation of the system because in the last analysis, it increases both their workload and its complexity, it increases the possibilities of failure and potentially disrupts their relationship with the workforce with very few guaranteed benefits. Far better to formally fulfill the plan for creating brigades whilst actually continuing to work in the same manner, after all supply difficulties will continually frustrate the operation of the system anyway. Ratchet planning and the inability to transform productivity gains into additional investment funds operate to counter this experiment in the same way as they were seen to undermine the Shchekino experiment. In conditions of labour shortage the disciplinary power of the brigade council is little

stronger than that of the management and while consumer goods are in short supply the incentive effects are dubious. From the worker's point of view the brigade system is recognised as an attempt to further discipline and control their activities. Soviet sources have reported that in some instances, when workers are transferred to a khozraschet brigade they have left the factory to work elsewhere (134). In other instances, for example at a works meeting at the Vladimir tractor plant, no one voted for the transition to the system partially because of uncertainty about the nature of the system (135). The basis of worker's antipathy to the brigade system emerges from a survey of readers letters to Literaturnaya Gazeta (136). This article shows that whilst correspondents are opposed to wage-levelling, which they argue is unfair to conscientious workers, they also recognise that it is supported by management. The reason for this is that it is in management's interest, as it gives them a quiet life and saves them actually identifying good and bad workers. However, the correspondents are also dubious about the impact of the brigade system. Some argue that the implementation of the system will cause an irrational redistribution of workers towards plants with the most modern equipment because here the possibilities of bonus are enhanced. Others suggest that the major problem with the system is that it replaces objectively set centralised norms (based on skill, experience etc) by localised subjectively based norms. This fear captures exactly the aim of the system, eventually introducing greater differentiation of workers' wages. Ultimately workers'

opposition to the brigade system is grounded on the knowledge that the benefits that may accrue to them, and remember that given endemic supply problems and plan instability these benefits are not guaranteed, will be small.

Brezhnev, speaking at the 17th Trade Union Congress in March 1982, was critical of the slow dissemination of the full Brigade system (137). He also criticised the disbanding of brigades, which he argued was caused by management failing to accept their responsibilities and provide brigades with the necessary conditions for success. As already pointed out, this is not necessarily within management's power. It would seem that at this time the impetus for the extension of the brigade system within industry was beginning to flag. Furthermore, even within those plants that had established the full system, the enhancement of productivity occurred at a declining rate. The initial results of the implementation of the system may well provide spectacular success but after the first year or two the productivity increments begin to decline to around 5% per annum (138).

Furthermore, the original successes of the brigade system in construction proved difficult to sustain and the brigade system was certainly not the solution to all that sector's problems. Even though in the early 1980's Soviet writers were still writing about the benefits of the brigade system for construction (139), as Zotov points out, by 1982 all

the major construction ministries failed to fulfil their production targets and the level of machine idle time had begun to rise (140). This is precisely the opposite performance than that expected of a sector where the brigade system had become widely implemented. Over 40% of the brigades working in construction were supposed to be operating on khozraschet, almost three times the percentage in industry, but in reality the number was far fewer (141).

As Nikitin points out, even apparently successful brigades can run into difficulties (142). He cites the example of a Murmansk Industrial Building Trust which had over the period 1974-1979, raised its production by 72%, reduced its workforce by 33%, had a reputation for good quality work and had always completed projects either on time or ahead of time, as a result of introducing the brigade system. However, this Trust had overspent its wage allocations as a result of the reduction of the wage fund on a ratchet basis and therefore, any further extension of the brigade system was halted. Once again planning from the achieved level retards the momentum of an experimental initiative.

The example of the Orel Construction Administration illustrates the problems that still arose in the construction sector (143). In 1979 more than 12,000 man days were lost through absenteeism, which usually occurred on Mondays and as noted previously, this is usually

drink-related (144). The net effect of this was to severely disrupt the rhythm of work. The aim of the brigade system had been to overcome precisely this type of problem and the reasons why it didn't are instructive of the broader problems even when the experiment is introduced.

The brigade council, charged with resolving these problems fared little better than management had done previously. When punishment was meted out to labour discipline violators they simply left the collective. As the Administration was already 1,500 workers below the planned complement it could ill-afford to lose workers. The usual problems of supply difficulties and plan instability, coupled with poor supervision of poorly motivated young workers compounded the difficulties and showed that in these circumstances the brigade system offers no more of a constraint upon labour indiscipline than the previous mode of organisation.

The Soviet response to these problems was to seek administrative change and the adoption of a new resolution on the implementation of brigades (145). This sought to deal with a number of the problems enumerated in this chapter; attempts were made to improve the preparation for and the transition to the brigade form; to provide longer term and more stable plans for brigades; pressure was brought to extend integrated complex brigades working on khozraschet; improvements were called for in both the training and remuneration of brigade leaders; calls were

made for the increase of party activity within brigades etc. The argument developed in this chapter suggests that such changes will have a minimal effect on the dissemination of the system. This question will be returned to briefly in the final chapter.

SECTION 4: EXPERIMENTAL ATTEMPTS TO SOLVE THE PROBLEM OF WORK NORMS.

This section will briefly review a number of other experimental initiatives concerned with the vexed question of work norms. The necessity for work norms in the USSR has already been explained as the result of the absence of the operation of the law of value in a social system still characterised by exploitative social relations of production. As concrete labour in the USSR is not reduced to abstract labour and equilibrated through the mechanism of competition and the market, this process is achieved by administrative mechanisms. However, the contradictions inherent in the process of setting, upgrading and operating work norms make this highly imperfect. Given the centrality of this problem it is not surprising that experimental initiatives were introduced in an attempt to resolve these problems. Specifically it had been long recognised that Soviet workers would strive not to overfulfil their individual assignments because overfulfilment would mean the uprating of work norms (146). This would leave the worker with no material advantage, only increased work intensity for the same return. Planning from the achieved level has a similar result for the individual as it does for the enterprise. This means that the operation of the economic mechanism posits a ceiling on potential labour productivity advances and leads to perpetual hidden reserves and it is in the interests of both the worker and

the management to evade their upgrading.

In order to break this logic of the planning process an experiment was introduced at the Aksai plastics factory in Rostov (147). The aim of the experiment was to give piece-rate workers an incentive to raise their work intensity by upgrading their work norms. If a worker, on his own initiative, increased his work norm by 10%, half of the savings obtained as a result over the next three months, would be paid to him as a lump sum bonus. If the norm was raised by 15-20% then the worker would receive a lump-sum bonus equivalent to half of the resulting savings over a six month period (148). These payments were to be made prior to the implementation of the new norms and prior to the results being achieved. Furthermore, if the norms to be upgraded referred to the work of a brigade or work team of any size this could only be undertaken if everyone in the brigade agreed. In any case all changes in norms could only be carried out if ratified by the plant's trade union committee.

As an example, Alekseev cites a brigade that agreed to increase its production from 50 to 64 units per shift. The economic effect of this would have been a saving of 1,030 roubles in the 6 month period hence the brigade received an immediate bonus of 515 roubles (149). The balance of any savings made were transferred to a centralised fund that could be used to pay further bonuses for high quality work.

Furthermore, it was agreed that the Aksai plant management would only have the right to increase work norms if the conditions of production were changed. For example, if plant and equipment was rennovated or if new technology was introduced, it was recognised that this would effect work capacity and therefore norms would have to be raised but otherwise the initiative must come from below.

The initial results from the experiment were impressive. In each of the first five years of the system's operation at the Aksai plant, half of the plants piece-rate workers filed requests to upgrade their norms. Over this period 733 people actually raised their norms, saving 200,000 norm hours, or the equivalent of 400 additional workers. This saved 220,000 roubles, half of which was paid to workers who as a consequence produced an additional 2,125,000 roubles worth of output (150). In the period 1968-72 the plant achieved average labour productivity growth of 29.5% per annum and wage outlays fell from 27 kopecks to 17 kopecks per rouble of finished output (151). These positive results were maintained over the first decade but at a diminishing rate, as labour productivity growth by 1978 was averaging 14% per annum, three times the industry average (152). Over the whole period labour productivity grew by a factor of six and average wages by a factor of three. The plant also made significant gains as labour discipline was improved. Labour turnover for example, fell from 30% in 1968 to only 6% in 1978 (153).

The obvious attraction of this experiment from the viewpoint of the ruling group is that norm setting and revision is no longer decided from above and therefore manipulated and/or resisted by the workforce but is determined either by the individual piece-rate worker or by the primary work unit, the brigade (154). This represents an attempt to get the Soviet workforce to heighten its own work intensity and take up the slack in production and labour organisation by introducing some degree of self-interest. As previously argued, the worker at the point of production is the only person who can truly regulate and maintain the intensity of his own labour at the optimum level and see the potentialities for savings in time, materials and labour. From the viewpoint of the ruling group the payment of lump sum bonuses will be recouped many times over from the enhanced production into the indefinite future. Consequently, it was decided to generalise the experiment.

In the Rostov region, 205 enterprises transferred to the system, involving 21,000 workers increasing their norms, amounting to the equivalent of 3,500 new production workers and saving almost 2.4 million roubles in the process (155). However, as Aganbegyan complains, beyond this the experiment was not widely disseminated, even though the experiment appears applicable to any plant where piece-rates or collective brigade norms are in operation. (156). The reasons for the failure to generalise the experiment comprises a catalogue of familiar problems.

Firstly, enterprises were lukewarm in their acceptance of the experiment and approached it in a formalistic and superficial manner. Often complaints were raised that enterprise management failed to abide by the terms of the experiment and arbitrarily disregarded time periods or attempted to uprate norms. They tended to treat the experiment as 'just another campaign' to be formally adhered to as long as it was topical and then dropped as soon as convenient or when pressure from above necessitated a hike in work norms. Furthermore, from management's point of view the instructions for the adoption of the system were vague and the ambiguities caused reluctance to adopt the experiment.

Secondly, management's lack of enthusiasm was reinforced in some instances when there was no surplus funds to pay the initial lump-sum bonuses (157). This potentially meant withdrawing funds from elsewhere which could cause immediate problems even if the experiment delivered the enhanced production in the future. Given the relatively short time horizons where Soviet managerial decision making is concerned, it is likely that Soviet managers would be averse to such a potentially risky manoeuvre. Furthermore, the 'profitability' of such a scheme does not necessarily yield specific advantage for plant management as the enhanced profitability is dissolved in the enterprise's overall performance and therefore, they do not perceive it to be in their direct self-interest.

Thirdly, if workers accept tighter norms and agree to produce more this is predicated upon the provision of conditions to enable them to meet their commitment (158). There has to be a stable supply of raw materials, tools and energy supplies. Workers under the conditions of this experiment require the correct rhythm of production with little idle-time, either between or within shifts, if the higher norms are to be achieved. However, the chaotic nature of material and technical supply is outside the control of the workforce and of the management of the experimental plants and their enhanced performance does not translate into improved access to either raw materials or equipment. This instability deters workers from adopting the experiment and furthermore, adds to management's scepticism over the benefits of the experiment particularly if the lump sum bonuses have been paid and the enhanced production is not forthcoming in the short-run. Once again it should be noted that the poor frequency of supply leads to arrhythmic production cycles with a consequent effect upon both the quality and quantity of output. It leads to the abuse and therefore, accelerated depreciation, of fixed capacity and poor attention to maintenance and repair. The emergence of this destabilised pattern of production sets up the need for low norms and labour surpluses in order to accommodate supply difficulties and still fulfil the plan. Consequently, the vicious circle that it was hoped the Aksai system would breach, reasserts itself.

The Aksai experiment as noted, refers primarily to the work of piece-rate workers but, this is obviously inappropriate for time paid workers. In modern industrial plants, particularly those based on flow production, time rates prevail. Nevertheless, the desire to increase labour intensity is no less pressing. This is achieved by maintaining a correct rhythm of work and gradually increasing the technically validated normed output. Another experimental initiative, begun at the Volga Automotive factory (VAZ), is based upon the recognition that in order to raise the degree of intensity of work workers need to be recompensed (159). The basic intention was to pay time rate workers bonuses, up to 40% of their base wage, for the fulfilment of a targeted output level which had been based upon technically substantiated norms for a particular brigade (160). Furthermore, as the plant had more staff than specified in the plan further bonuses, up to 20% of the base wage, were payable if the brigades moved towards the technically validated complement. These bonuses were implemented for a period of time but when the regular reviews of base wages took place they were integrated into the basic wage (161). In a sense they were temporary bonuses to tighten labour organisation. Bonuses were also payable for workers who upgraded their skills and qualifications and these elements of the experiment were integrated into the 1979 planning resolution (162). Even though the VAZ experiment received official support by mid-1980 it had only been implemented at just over 50 enterprises (163).

Another initiative to increase the level of worker's norms was implemented at the Dinamo plant in Moscow (164). The experiment implemented here, was based upon the recognition that norms do not necessarily reflect the productive potential of each worker. Therefore, rather than paying bonuses to workers for overfulfilling unrealistically low norms the Dinamo plant introduced bonuses for the fulfilment of workers personal plans. The idea is that using the present overfulfilment as the base, the worker adopts a personal plan to increase his output and is paid according to this index.

The obvious problem with both of these experimental initiatives is why should workers co-operate? If there is a labour shortage the option of movement would allow workers to avoid these administrative schemes for increasing work intensity. Furthermore, the material incentives are small and as repeatedly noted, ineffective. The disappointing rate of success in generalising these two initiatives suggests that both worker resistance and managerial reluctance combine to frustrate the experiments.

The alternative attempts to change the Soviet labour process, outlined in this chapter, could be extended to include a number of other experimental initiatives both in industry and agriculture. However, I would argue that irrespective of the detail of the experiments, their fate has been remarkably similar. The explanation and implications of this are taken up in the concluding chapter.

FOOTNOTES TO CHAPTER 5.

1. It would be both pointless and impossible to deal with every experimental initiative cited in the Soviet press, some of which, like the variants on the Shchekino model, are either relatively short-lived or alternatively little different from the major initiatives.

2. Chapter 4, Section 5.

3. P. Novokshonov, Izvestia, 10/4/75, p.3. To adequately supervise the pace and quality of each worker's work would require even more supervisory staff and in the conditions of apparent labour shortage this is obviously not a feasible alternative. It should be noted that similar problems of supervision in construction work also emerge in the west.

4. See M. Zelichonok and I. Milyavskii, Pravda, 18/10/70, p.2.

5. Ibid., p.2.

6. M. Zelichonok and I. Milyavskii, Pravda, 9/3/71, p.2.

7. M. Zelichonok and I. Milyavskii, Pravda, 18/10/70, p.2.

8. A. Agronovskii, Izvestia, 9/10/71, p.2.

9. See for example, J. Berliner, "Factory and Manager in the USSR", Cambridge Mass., 1957, pp.95-105.

10. Ibid., pp.107-113.

11. M. Zelichonok and I. Milyavskii, Pravda, 9/3/71, p.2, point out that from early 1971 onwards the construction ministry pressed for the experiment's extension.

12. Agronovskii, op.cit., p.2.

13. P. Novokshonov, op.cit., p.3.

14. Agronovskii, op.cit., p.2.

15. A. Agronovskii, Izvestia, 16/7/72, p.1.

16. Ibid., p.1. Whilst workers can be held responsible for losses incurred by their enterprise there are limits linked to wages and salaries. See Livshitz and Nikitinsky, op.cit., pp.187-189.

17. Agronovskii, op.cit., p.1.

18. N. Zlobin, Pravda, 15/3/72, p.2.

19. V. Parfenov, Izvestia, 21/7/72, p.1.

20. A.Agronovskii, op.cit., p.1.
21. Izvestia, 20/7/72, p.1.
22. Izvestia, 4/3/73, p.1. Around the end of 1972 the system became known more widely as the 'khozraschet' or 'contract brigade system', see for example, N.Zlobin, Pravda, 23/9/72, p.2.
23. M.Gavin and F.Chernetskii, Izvestia, 1/11/72, p.3.
24. Izvestia, 4/3/73, p.1.
25. V.Baiderin and A.Turbanov, Izvestia 7/7/73, p.5.
26. See A.Agronovskii, V.Vukovich, A.Dergachev, V.Drozdov, V.Novelskii, A.Nikitin and A.Turbanov, Izvestia, 26/4/73, p.2.
27. L.London, Literaturnaya Gazeta, 5/1/77, p.11.
28. See M.Gavin and F.Chernetskii, op.cit., p.3; V.Sevast'yanov, Pravda, 20/5/73, p.2 and P.Kucherenko, Pravda, 21/7/75, p.2.
29. Pravda, 18/6/75, p.2.
30. V.Sevast'yanov, Pravda, 3/4/74, p.2.
31. A.Agronovskii, et al, op.cit., p.2.
32. V.Sevast'yanov, Pravda, 12/12/72, p.2.
33. V.Sevast'yanov, Pravda, 18/12/73, p.2.
34. Ekonomicheskaya Gazeta, No.13, March 1975, p.9.
35. Izvestia, 17/8/76, p.1.
36. See for example L.Abalkin, "Perevod ekonomiki na intensivnyi put' razvitiya", Voprosy Ekonomiki, 1982, No.2, p.10 who pointed out that in the early eighties that almost 90% of capital investment was work in progress. Furthermore, long construction delays means that new enterprises reach their capacity after between 5 and 7 years. See R.Tikidzhiev, "Voprosy balansirovannosti vosproizvodstva osnovnykh fondov i trudovykh resursov", Planovoe Khozyaistvo, 1981, No.12, p.47.
37. Ekonomicheskaya Gazeta, op.cit., p.9.
38. Izvestia, 17/8/76, p.1.
39. I.N.Dmitriyev, Ekonomicheskaya Gazeta, No.46, November 1976, p.6.
40. V.Sukhanov, Izvestia, 6/4/75, p.3.

41. Ibid., p.3.
42. V.Sevast'yanov, Pravda, 18/12/73, p.2; P.Kucherenko, op.cit., p.2.
43. A.Turbanov, Izvestia, 5/3/74, p.3.
44. Izvestia, 17/8/76, p.1.
45. M.Gavin and F.Chernetskii, op.cit., p.3.
46. A.Agronovskii, et al, op.cit., p.2.
47. Ibid., p.2.
48. Agronovskii, op.cit., p.1.
49. V.Sevast'yanov, Pravda, 18/12/73, p.2.
50. Ibid., p.2.
51. V.Baiderin and A.Turbanov, Izvestia, 7/7/73, p.5.
52. Pravda, 27/1/74, p.3.
53. Literaturnaya Gazeta, 2/3/77, p.10.
54. Ibid., p.10.
55. Yu.Grinko, Izvestia, 26/7/79, p.2.
56. P.Bunich, "Ekonomicheskoe stimulirovanie na sovremennom etape: puti sovershenstvovaniya", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1975, No.6, p.70.
57. There are some disparities between the different authors figures for the dissemination of the brigade system. For example, P.Bunich, op.cit., pp.67-85 cites the figure of 21,500 brigades in 1975. Furthermore, in an earlier article, V.Sevast'yanov, Pravda 18/12/73, p.2 suggests that there were 6,000 brigades in 1973 and so on. The disparities in the figures are due to two reasons; firstly, it is not always clear what part of the year is being referred to and in this period brigades were being formed fairly rapidly; secondly, because of the problems of collecting information on the existence of brigades the figure often only emerges retrospectively.
58. V.Sevast'yanov, "Trudnyi perekhod", Kommunist, 1977, No.7, pp.37-46.
59. V.Goncharov, Pravda, 1/10/79, p.2.
60. Ibid., p.2.
61. Grinko, op.cit., p.2.

62. V.Sevast'yanov, (1977), op.cit., p.46; See also Pravda, 3/11/75, p.1.
63. A.Tokarev, Izvestia, 16/12/75, p.2.
64. A useful survey of brigades in agriculture is provided by K.Wadekin, "What is new about brigades in Soviet Agriculture?", RL 47/85.
65. T.Baranenkova, "Rezervy ekonomii rabochei sily", Voprosy Ekonomiki, 1980, No.5, p.59.
66. V.Kostin, Ekonomicheskaya Gazeta, 1976, No.36, p.13.
67. Ibid., p.13.
68. For example the average sized engineering enterprise in the USSR employs 1,600 workers whilst in West Germany the comparable figure is 250. Pravda, 8/12/82, p.2.
69. As noted throughout Chapter 2.
70. Baranenkova, op.cit., p.60. See also N.T.Pashuta and G.T.Kulikov, "Kollektivnye formy organizatsii truda", Moscow, 1983, pp.5-12.
71. V.Chernov, Ekonomicheskaya Gazeta, No.45, 1980, p.8.
72. A.Levikov, Literaturnaya Gazeta, 1978, No.19, p.11. On the link between the brigade system and the "mentor" movement see V.I.Barbashov, "Obuchenie molodykh rabochikh i nastavnichestvo v brigade" in "Brigadnaya forma organizatsii i stimulirovaniya truda", V.N. Shurueva (Ed), Moscow, 1983, pp.81-85.
73. Chernov, op.cit., p.8.
74. Ibid., p.8.
75. M.Burenkov, Izvestia, 10/1/76, pp.1-2.
76. Ibid., p.2.
77. A.Levikov, op.cit., p.11.
78. See for example, P.Bunich, "Zarabotnaya plata kak ekonomicheskie stimul'", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1980, No.7, and L.Kheifets, "Gosudarstvennoe regulirovanie zarabotnoi platy", Voprosy Ekonomiki 1982, No.6.
79. V.A.Sekachev, "Praktika raspredeleniya zarabotka v usloviyakh brigadnoi formy organizatsii i stimulirovaniya truda", in Shurueva (Ed), op.cit., pp.58-62 for an account of how the KTU is calculated and used.
80. A.Rzhevuskii, Ekonomicheskaya Gazeta, 1980, No.46, p.8.

81. Ibid., p.8.
82. V.Parfenov, Pravda, 7/4/80, p.2.
83. A.Mokin, Sotsialisticheskaya Industriya, 6/2/77, No.31, p.2.
84. Baranenkova, op.cit., p.61.
85. B.N.Gavrilov, Ekonomicheskaya Gazeta, 1980, No.47, p.2.
86. A.Mokin, op.cit., p.2.
87. A.Levikov, op.cit., p.11.
88. V.Chernov, Ekonomicheskaya Gazeta, 1980, No.1, p.9.
89. Mokin, op.cit., p.2.
90. T.Sobgaide, Ekonomicheskaya Gazeta, 1977, No.4, p.8.
91. Ibid., p.8.
92. A.Levikov, Literaturnaya Gazeta, 1978, No.20, p.11
93. See M.Haraszti, "A Worker in a Worker's State", London, 1977, pp.48-52.
94. V.Palitsyn, "Sotsial'no-psikhologicheskie rezervy rosta proizvoditel'nosti truda v brigade", Sotsialisticheskii Trud, 1979, No.8, p.93.
95. Ibid., p.93.
96. See TsK KPSS & Soveta Ministrov SSSR, "Ob ulushenii planirovaniya i usilenii vozdeistviya khozyaistnennogo mekhanizma na povyshenie effektivnosti proizvodstva i kachestva raboty", in "Resheniya partii i pravitel'stva po khozyaistvennym voprosam", Vol.13, 1979-1981, Moscow, 1981, p.114 (Hereafter "TsK 1979").
97. Ibid., p.114.
98. Ibid., p.114.
99. V.Parfenov, Pravda, 10/8/81, p.2.
100. N.Kozlov, Ekonomicheskaya Gazeta, 1980, No.45, p.6. In a later article by Parfenov, Pravda, 27/6/83, p.2, he complains that in the first two years of the 11th plan, even though 300,000 new brigades were created, qualitatively many of the brigades were inadequate and were unable to increase their labour productivity.
101. B.N.Gavrilov, Ekonomicheskaya Gazeta, 1980, No.47, p.7; Yu.F.Tsarev, "Opyt vnedreniya brigadnogo khozyaistvennogo rascheta", in Shurueva (Ed), op.cit.,

pp.53-57.

102. A.Milukov, Ekonomicheskaya Gazeta, 1980, No.43, p.10.
See Pashuta and Kulikov, op.cit., pp.125-129.
103. Gavrilov, op.cit., p.7.
104. Parfenov, (1981), op.cit., p.2.
105. Gavrilov, op.cit., p.7, points out that at the Porshen plant in Alma Ata the average brigade size is 120 workers.
106. See V.Stolyanov, Sotsialisticheskaya Industriya, 13/7/82, p.2 and also I.A.Lanshin, Ekonomicheskaya Gazeta, 1982, No.10, p.6.
107. Gavrilov, op.cit., p.7.
108. N.Kozlov, op.cit., p.6.
109. Ibid., p.6; see also Yu.Sovtsov and A.Sokolov, Komsomol'skaya Pravda, 13/4/80, p.2 and Yu.Antropov and V.Lyakutkin, Sotsialisticheskaya Industriya, 3/2/83 and 4/2/83, p.2.
110. M.Glyantsev, "Effektivnost' - glavnoe trebovanie nyneshnego etape", Sotsialisticheskii Trud, 1983, No.5, p.65.
111. Kozlov, op.cit., p.6.
112. A.Milukov, op.cit., p.10.
113. Glyantsev, (1983), op.cit., p.65.
114. B.N.Gavrilov, Ekonomicheskaya Gazeta, 1980, No.45, p.6.
115. V.Chernov, Ekonomicheskaya Gazeta, 1980, No.1, p.9.
116. See Tables 15 to 19.
117. See throughout Chapter 2.
118. Gavrilov, op.cit., p.7.
119. M.V.Egorov, Ekonomicheskaya Gazeta, 1980, No.45, p.7.
120. Ibid., p.7.
121. V.Svirchevskii and D.Nikol'skii, "Razvitie brigadnoi formy organizatsii i stimulirovaniya truda v promyshlennosti", Vestnik Statistiki, 1984, No.2, p.17.
122. Lanshin, op.cit, p.6.
123. Ibid., p.6.

124. Gavrilov, op.cit., p.7.
125. Lanshin, op.cit., p.6.
126. Antropov and Lyakutkin, op.cit., p.2.
127. Lashin, op.cit., p.6.
128. N.Kozlov, op.cit., p.6.
129. Ibid., p.6.
130. Lanshin, op.cit., p.6.
131. I.Kalandarov, Trud, 5/8/82, p.2.
132. L.Okhozin, Pravda, 26/1/83, p.2.
133. V.Stolyanov, Sotsialisticheskaya Industriya, 13/7/82, p.2. For the possible complexity of introducing the system see "Proizvodstvennaya brigada: sotsial'no ekonomicheskie voprosy razvitiya", Minsk, 1982, pp.28-30.
134. V.Morozov, "O formal'nom vnedrenii brigadnogo metoda na predpriyatiyakh instrumental'noi promyshlennosti", Sovetskie Profsoyuzy, 1982, No.2, p.6.
135. E.Gonzal'ez, Trud, 25/5/82, p.2.
136. T.Dzokaeva, Literaturnaya Gazeta, 17/2/82, p.11.
137. L.I.Brezhnev, Trud, 17/3/82, pp.1-2.
138. Stolyanov, op.cit., p.2.
139. E.Gonzal'ev, Trud, 15/12/81, p.6, still talks about the advantages of implementing the brigade system in terms of 20% cuts in construction time and productivity increases up to 25%.
140. V.Zotov, Sotsialisticheskaya Industriya, 5/3/83, p.1.
141. N.Zlobin, Trud, 15/12/81, p.6.
142. A.Nikitin, Literaturnaya Gazeta, 21/5/80, p.10.
143. I.Kalakin, Komsomol'skaya Pravda, 16/1/80, p.2.
144. See Chapter 2, Section 6.
145. After discussions in the Politburo, reported in Pravda 12/11/83, p.1, the new resolution appeared in Pravda, 3/12/83, p.1.
146. See Chapter 2, Section 6.
147. See Smirnova and Sabo, op.cit., pp.186-187; Shkurko, 1977, op.cit., pp.132-150; L.Kheifets, "Sovershenstvovanie

khozyaistnennogo mekhanizma i material'noe pooshchrenie
rabotnikov", Voprosy Ekonomiki, 1980, No.9, p.20.

148. N.Alekseev, Pravda, 2/6/73, p.2.

149. Ibid., p.2.

150. Ibid., p.2.

151. Ibid., p.2.

152. N.Nagibin, Literaturnaya Gazeta, 31/8/83, p.13.

153. Ibid., p.13.

154. N.Nagibin and I.Ryazhokikh, Pravda, 18/1/75, p.3.

155. Ibid., p.3.

156. Aganbegyan, Trud, 12/12/82, p.3.

157. Nagibin and Ryazhokikh, op.cit., p.3.

158. Nagibin, op.cit., p.13.

159. Kheifets, op.cit., p.17.

160. P.G.Bunich, "Zarabotnaya plata kak ekonomicheskii
stimul'", Ekonomika i organizatsiya promyshlennogo
proizvodstva, 1980, No.7, p.8.

161. Ibid., p.8.

162. "TsK 1979", op.cit., p.114.

163. L.A.Kostin, "Proizvoditel'nost' truda na sovremennom
etape", Ekonomika i organizatsiya promyshlennogo
proizvodstva, No.12, p.68.

164. Bunich, op.cit., p.7.

CHAPTER 6: CONCLUSIONS.

The central proposition developed in this thesis is that the antagonistic nature of the social relations of production in the USSR create a vicious circle of problems, outlined in Figure 1, which explain the current decline in economic growth and poor economic performance. It was argued in Chapter 1, that the central question relates to the extraction, by the ruling group from the direct producers, of a socially produced surplus. The Soviet ruling group requires a growing, usable surplus to stabilise and reproduce its own socio-economic position.

However, the historical origins of the Soviet ruling group have produced a particular set of relationships around the surplus extraction process which were outlined in Section 2 of Chapter 2. Unlike the ruling class under the capitalist mode of production, the ruling group in the USSR does not have its dominance stabilised in property relations. Nor is the Soviet workforce "free" in the dual sense identified by Marx. Hence the relationship between the worker and the ruling group is one of semi-dependency. The absence of the controlling mechanisms of unemployment and meaningful wage differentiation and incentives means that there is little correspondence between work and rewards and the law of value does not operate as the principal regulatory mechanism. Furthermore, the ruling group does not enjoy the unconstrained use of force that was available to the ruling group in both feudal and slave societies. The historical

origins of this situation need to be outlined briefly, in order to place the contemporary problems and the fate of the experimental initiatives, outlined in Chapters 3, 4 and 5, into context. This will enable some tentative conclusions to be drawn.

The October Revolution removed the law of value as the prime economic regulator in the USSR. Even during the period of NEP, the law of value only operated in an attenuated form because the state monopoly of foreign trade removed any spontaneous equivalence with the world market and the state control of the commanding heights of the economy distorted the internal operation of the law of value (1). During the early plan period the task facing the ruling group was the basic industrialisation of the economy and the creation of a military power capable of guaranteeing their survival in a hostile environment. The historical legacy of Stalinism was of an economy transformed, in the most brutal manner, from a largely agrarian, semi-industrial base to the second largest industrial force in the world. However, this transition was achieved on the basis of an economic mechanism reliant upon direct force and the atomisation of the workforce (2). The combination of highly repressive labour codes (3), the activity of the secret police, the forced labour of camp internees and the destruction of the party and labour movement, combined to produce a workforce that was controlled and worked, however chaotic the eventual result (4). This form of control was predicated upon the complete

exclusion of direct producers from either economic or political decision-making but in the process of de-politicising the workforce the ruling group ceded to them indirect negative control over their own labour process in the factories (5). This is the logical adjunct to the development of terror and atomisation as the prime means of economic regulation.

The basic tasks of this period were achieved primarily by the extensive expansion of the absolute surplus. That is by drawing into social production previously untapped material resources and mobilising a workforce which had been employed in the household, semi-subsistence sector of the economy or low productivity agriculture. The directly coercive forms of control that emerged, were sufficient, even if extremely wasteful, for achieving the desired results and the USSR, with limited, easily prioritised, targets was able to build up Department 1 industries and arm itself. Force and fear were the ultimate arbiters in the surplus extraction process but as long as the surplus could be expanded absolutely, the appearance of growth could be maintained and the deterioration of control at the enterprise level could be tolerated.

However, in the post-war period the tasks facing the ruling group began to change and the objective basis of this form of control began to fracture. Both western and Soviet sources talk in terms of a change in growth strategy from extensive to intensive development (6). However, if labour

activity is the only source for the production of use-values then the change in Soviet growth strategy implies changes in the exploitative relationship between the ruling group and the direct producers. It would therefore, be more precise to characterise this strategic change as a transition from the extensive expansion of the absolute surplus to attempts to increase intensively the relative surplus. The point is that this necessitates a change in the forms of control and economic regulation. What was once adequate for one set of tasks was no longer adequate. The expansion of the relative surplus depends upon a different species of control and regulation, that needs to be simultaneously more subtle, more all-pervasive, and more coercive. Belotserkovsky has argued that this was made more difficult because control was partially lost in the years immediately following Stalin's death as a result of Krushchev's inept attempts to initiate some limited de-Stalinisation (7). However, more fundamental changes were taking place.

Firstly, the possibilities of further extending the growth of the absolute surplus had already begun to decline as the system itself, because of its wastefulness and inefficiencies, posited the necessity for a large agricultural workforce, relative to other developed countries. This curtailed the flow of population into the industrial sector where it had been absorbed, in increasingly large numbers, into the unproductive sectors

of the economy, like repair, maintenance and auxiliary production. The necessity for the growth of these sectors was based upon the poor quality of production and the loose control exercised by the centre over manning levels but at the same time this reduced the possibilities for further expansion of the absolute surplus.

Secondly, technological change demanded changes in the form of economic regulation. Modern industry is based upon a complex technical division of labour which is simultaneously subject to two contradictory forces. On one hand, it increasingly involves the fragmentation of tasks, thereby reducing the area of expertise and responsibility of the individual worker. However, simultaneously it depends upon an ever more complex integration and co-operation between these tasks. After all the division of labour can integrate the the activities of workers in separate plants, enterprises, regions and countries, both in the west and within the CMEA bloc. Production is therefore, becoming increasingly socialised. Furthermore, the vast outlays of social labour time necessary to construct the means of production and the R&D necessary for its continual upgrading, makes it essential that plant is correctly utilised. It is imperative that production takes place at the correct rhythm; that plant is utilised continuously and that shift coefficients rise; that the quality and timing of maintenance, service and repair are adequate; that factor inputs are of adequate quality and are used efficiently and economically etc.

This all implies the necessity for a discipline both within the ranks of the direct producers and management that is based on more rational grounds than that existing in the thirties. Furthermore, the complex integrated nature of production gives individuals unprecedented negative control potential and autonomy. As the economy becomes more complex so the consequences of negative control become more far-reaching and the whole chain of linkages can be breached by the activities of small groups of workers, ITR or management. As a consequence force and atomisation cannot be the basis of economic regulation and control over the modern industrial workforce as it directly contradicts the logic of development of the productive forces.

Thirdly, the process of economic development and technological change also changes the nature of the direct producers and begins to present the possibility of destroying the atomisation characteristic of previous periods. The increasingly hereditary nature of the workforce, the distance from peasant individualist origins, the collective organisation and the integrated nature of modern work, the enhancement of educational and skill levels plus the rise in material expectations all pose the possibility of undermining the old mechanisms of control (8).

Hence the objective foundations for both sustained economic growth (the extension of the absolute surplus) and the

methods of control (terror and atomisation) had diminished in the post-war period. Consequently, it can be argued that the social relations of production and the methods of control developed in the previous period, which at one time facilitated growth and the transformation of the social system, were now in decline and became a fetter upon the further development of the productive forces. This does not imply absolute decline but the generation of an increasingly large gap between production potentialities and the actual level of production. This expresses itself in the retardation of growth rates.

The preceding argument suggests that the central problem for the ruling group, in the absence of the law of value, is that there exists no unambiguous regulator of economic activity that can provide both discipline and maintain their privileged position. In its present form, control and regulation arises via the planning process, that is inherently conditioned and amenable to manipulation by the self-interest of the enterprise management and the negative pressure of the workforce. This mechanism is clearly inadequate for the task. It necessitates continual bureaucratic intervention from the centre, which in turn reinforces the problems that made the intervention necessary in the first place. Consequently, the Soviet ruling group's control over the labour process is more tenuous than that of its capitalist counterparts. The ruling group and its academic representatives, clearly recognise the locus of the problems, in the process of

surplus extraction, even if the terms they use are not these (9). Obviously there can be no return to previous forms of control, which is not to say that force will not be used against recalcitrant individuals in the USSR but simply acknowledges that it can longer be the prime regulator of economic activity, if indeed it ever could. This is explicitly acknowledged by Zaslavskaya in the Novosibirsk Report (10). The necessity is therefore, to move away from extra-economic control and find a new form of control, that will neither destabilise the ruling group's position, by provoking popular discontent but which will simultaneously increase its control over the surplus, allow the incorporation of some sectors of Soviet society and thus stabilise its political hegemony. The form of control will need to be less overtly coercive but will need to be based upon a more subtle form of force.

In present conditions crude attempts to raise the rate of exploitation can be expected to produce the same results as those that occurred in the early sixties. For example, at Novocherkassk in 1962, attempts to impose simultaneous price increases for dairy and meat products coupled with an increase in the length of shifts in the local enterprises precipitated a worker's revolt and the seizure of the town. The struggle here and elsewhere in the same period was eventually harshly repressed but these events illustrate that the transparency of social relations in the USSR is such that any action by the ruling group to increase the rate of exploitation is seen as precisely that (11). In the

absence of the veil of commodity fetishism, economic discipline cannot be imposed, by reference to impersonal, immutable and apparently 'natural' forces as it can in the west.

The reintroduction of the law of value as the principal regulatory mechanism would appear the most obvious solution for the Soviet ruling group. It could simultaneously provide the type of unambiguous regulation that has been referred to continuously throughout this thesis, with the advantages of disciplining both workforce and management. Furthermore, it would allow the coalescence of the ruling group into a class because the reintroduction of the law of value implies the "freeing" of labour and ultimately the formalisation of property rights. For the workforce this requires the sale of their labour power and for the ruling group, or at least some sections of it, ultimately real control and ownership of the means of production. However, amongst the many problems of this approach there is one fundamental difficulty. The reintroduction of the market which would turn labour power into a commodity and would necessitate the reintroduction of unemployment. Politically the abandonment of full employment (over-full employment) would undermine the hegemony of the ruling group and would in an immediate sense politicise factory relations. The major benefit of the atomisation of the working class was its depoliticisation and the destruction of the direct producers as a class. The reintroduction of the law of value would bring that class back into being. It would

undermine the ideological legitimacy of the ruling group and sever its links with the revolutionary past. As with attempts to increase the rate of exploitation, this would be seen as a conscious decision on the part of the ruling group. Consequently the direct return to market mechanisms is an unlikely course of action, no matter how attractive this may appear to some elements within the ruling group.

The attempts by the ruling group to reform the economic system since the mid-sixties are their response to these problems (12). If the return to overt force is impossible, if direct attempts at raising the level of exploitation are likely to provoke hostility and if the law of value cannot be simply reinstated this provides an explanation for the necessity for experimentation. The experimental initiatives since the late sixties can be viewed as attempts to find new forms of control or to graft onto the basic structure of Stalinist planning new techniques for controlling the surplus extraction process. They represent a 'bottom up' approach to reform and, as the other elements of the reforms petered out, the longevity of these experiments is a testimony to the centrality of the problems they sought to solve (13). The experiments were attempts to resolve specific manifestations of the underlying antagonistic relationships by administering into existence surrogate forms of control derived ultimately from the market but not being of the market. It could be argued that the different reform initiatives imitate different elements of the law of

value. For example, the Shchekino experiment itself and the pressure for its introduction in both a 'horizontal' and 'vertical' form is an attempt to replicate the way in which the law of value under capitalism operates to regulate manning levels both within the individual capitalist firm and through industries and regions. In comparison with capitalism, where this process appears as spontaneous and 'natural', in the USSR the mechanism is administered. The same could be said of the Aksai, Dinamo and VAZ experiments. Therefore, as a consequence the reforms are partial and piece-meal attempts to utilise in a technical manner some elements of the law of value without fundamentally effecting the underlying social relations of production. This explains why elements of the experimental initiatives sometimes contradict one another. All of the initiatives considered, sought to change the relationship between the worker and his work. After 18 years of such experimentation it should be possible to assess their past impact, consider the likely future prospects for reforms of this kind and draw theoretical conclusions.

Firstly, on a general level, the problems these initiatives addressed have not been resolved nor is there any evidence to suggest they will disappear of their own volition. On the contrary, the evidence presented in Chapter 2 suggests that the phenomenal forms that the antagonisms produce have deteriorated throughout the period of operation of the experimental initiatives. For example, growth continues to decline, the demographic situation becomes more acute, the

problems of labour shortages grow, labour discipline indicators deteriorate etc. We may conclude therefore, that without the limited successes of the experiments these indicators would have deteriorated further.

Secondly, the continual appearance over the period of a range of experiments and their variants, testify to the necessity for change and the search for new forms of control on the part of the ruling group. The experiments may fulfil the short-term and necessary function of dealing with problems in specific sectors; the Shchekino experiment in the chemical industry, Zlobin brigades in construction and so on, but in the longer term none have been successfully generalised. This leads to the important but obvious conclusion that in the USSR there is no mechanism that promotes spontaneous change. Localised success remains precisely that, unless administrative bodies press for its extension and even then the results are dissipated. If no spontaneous dynamic exists then experimentation is the only form that change can take and as experimental change sets up no momentum or dynamic of its own, this implies that continual experimentation is necessary. Furthermore, the packaging of the initiatives as experiments is probably the only way to make them acceptable initially to both workforce and management, bringing prestige and publicity in return for the implementation of the experiment.

Thirdly, the lack of impact of the experiments can also be gauged in another way. The planning reform of 1979, which

after all encompassed elements of all the experimental initiatives, had as its intention, the stimulation of production and the provision of discipline and regulation through the sphere of economic motivation. However, Andropov's first act on coming to power was the institution of a campaign for labour, plan and production discipline (14). That this and the legislative changes regarding the workplace (15), were necessary, testifies to the failure of the 1979 resolution to achieve its objectives.

What is being argued is that the experimental initiatives failed to fulfil their intended role. I believe Rutland is wrong in his bland assertions that these initiatives are all just examples of the "exchange of experience of leading plants" (16). The search for some form of control over the workforce and the continual stress on discipline and regulation is evidence of the degree of crisis that the system faces, that will ultimately jeopardise its own reproduction.

This still leaves open the specific question of how to evaluate the experimental initiatives. I would argue that there are several lessons to be drawn from the experiments. The Shchekino experiment and the other experimental initiatives have all followed a broadly similar pattern of development, (it is perhaps more correct to identify a pattern of limited growth and decline);

Firstly, they have all been based upon localised successes

in sectors of the economy or particular industries or enterprises, that have been experiencing specific difficulties.

Secondly, small scale generalisation occurred plus adaptation of the original idea that led to the introduction of a range of variants.

Thirdly, after the initial successes party and state pressure was exerted, usually in the form of legislative changes, for the wider dissemination of the experiments.

Fourthly, resistance arose to the intention of the experiments either in the enterprises themselves, causing further adaptation to take place, or at ministry level, causing their generalisation to be retarded.

Fifthly, where the experiments were now introduced the results were less dramatic than at the original locations.

Sixthly, the momentum slows at the original locations as the rules of the initiative change either because of contradictory objectives at the centre or because of contradictions in the initiatives themselves.

Seventhly, complaints arise concerning the slow generalisation of the initiatives and the lack of clarity regarding responsibilities for the experiments, leading to further legislative changes. The instability of the

regulations ironically further deters the acceptance of the initiatives.

Finally, the appearance is created that the experiments are being broadly disseminated, both by enterprises and ministries but this obscures the adaptations that have taken place along the way (which in some instances destroy the logic of the experiments) and the fact that in many instances the introduction of the experimental initiatives is an illusion that has changed nothing.

Each experimental initiative has originally promised the possibility of far-reaching changes in the labour process only to be frustrated by the external environment it is intended to transform. As long as the success of the experiment is determined by internally controllable factors, then the appearance of success can be maintained but once it confronts the vagaries of Soviet industrial life the momentum is lost both specifically and generally. Rather than transforming the system the experiment is forced to adapt.

This is easily identified from the example of Shchekino itself. It is ironic for example, that in a recent article on the Shchekino experiment there are a list of complaints seeking to explain the poor generalisation of the experiment (17). These include unstable plan targets, uncertainty about the wage fund, poor material incentives and so on. All of these elements were central to the

experiment's operation at the start in the late sixties; their absence was continually bemoaned throughout the 1970's; they were legislated for in the series of regulatory changes in the late 1970's, noted in Chapter 4; and they were all included in the planning resolution of 1979. Nevertheless, they are all still absent and this continues to retard the dissemination of the experiment.

This raises the question, if these conditions were present could the experiment work and if not, what conditions would be necessary?

It is ironic that the only way that the incentive effects of the experiment can operate is if the experiment has already been comprehensively introduced and is working well. The pre-condition for the experiment's implementation is the experiment's success at raising output in Department 2 industries and forging, as a consequence a closer link between work and rewards. The fact that it has proved difficult to generalise the experiment and that it is impossible to instantaneously implement it throughout all enterprises, ministries and regions, undermines the argument that it is the incentives element that will provide the way forward. This lends further credence to the argument developed in Chapter 3.

If that analysis is correct, it was not the material incentives element that accounted for the localised success in the first instance. The basic reason for success was the

increase in worker insecurity that the implementation of the experiment introduced at enterprise level. This was supplemented by the work of the internal commissions in tightening work organisation and norms. However, as noted this could only have a declining effect as the degree of worker security inevitably rose. This was the result of three things. Firstly, the number of workers released was bound to be largest at the outset and then diminish. Secondly, the option to move to other plants in the locality meant it was possible to avoid the experiment. Thirdly, the raising of planned tasks on a ratchet basis, apart from demoralising management at the experimental enterprises, meant they had an interest in the re-emergence of a safety factor of hoarded labour even if it was at a lower level than at the outset. Hence the experiment had its own internal limitations.

From the point of view of management the experience of the experiment, although it may have been desirable in the first instance, became negative. In the environment of ratchet planning, plan and wage fund instability and material supply difficulties, the experiment could only be desirable if it gave advantage over other enterprises. This it did not do. If anything it brought disadvantage both in terms of the tightened internal situation and the problem of retaining workers and the problems of expanding or renewing capacity.

What is being suggested therefore, is that the experiment

could only succeed if it could maintain worker insecurity and provide a mechanism whereby enterprise increases in productivity could be translated into increased access to investment goods. This has implications for the workforce and for the relationship between enterprises, ministries and planners.

For the latter set of relationships the only way to implement the experiment is to set enterprises against one another competitively. In other words the enterprises of a particular ministry would receive resources in terms of competitive tendering on the basis of past performance (and by extension a similar type of mechanism would be required to operate between ministries to enforce the intention of the experiment throughout all economic decisions). This would give direct advantage to successful enterprises and would install a mechanism whereby enterprises would be identified as failures. This would turn the implementation of the experiment into an externally coercive force upon plant management who would have to replicate the behaviour of the most successful in order to survive. Ultimately it is being suggested that some form of competitive mechanism for investment goods is a necessary concomitant for the successful generalisation of the experiment.

From the point of view of the workforce it would be necessary to introduce a situation whereby they could not escape the experiment. The experiment would have to be simultaneously implemented at all plants. If this were to

be the case the careful procedures adopted at Shchekino could not be replicated elsewhere. Furthermore, the intensity of worker insecurity would have to be raised and maintained and the differentiation of wages enhanced. Popov, for example, suggests that the experiment should be amended in the following manner (18). He suggests that the enterprise freeing workers should transfer them to some local body, the City Soviet for example. The enterprise should also transfer from the wage fund to this body the minimum wage for each worker, the balance of the wage fund being retained by the enterprise for material incentives for those remaining at the plant. The City Soviet should then be responsible for the placement of these workers and if they cannot or will not be placed then the City Soviet should find them menial work and pay them the minimum wage. Popov argues, that this will have a number of salutary effects. Firstly, it will tighten the labour discipline of those employed who will not wish to be released to this type of work. Secondly, the experience of menial work at the minimum wage, will 'educate' those released who in their future work will exhibit a more disciplined approach (19). Popov's argument is effectively a call for the re-introduction of unemployment as a disciplining mechanism. I would argue that this is implicit in the logic of the Shchekino experiment and that ultimately the failure to introduce unemployment leads to the diminishing effectiveness of the experiment.

What are the implications to be drawn from this analysis?

The suggestion is that the Shchekino experiment could only begin to work more fully by acting with a degree of compulsion on both workers and managers and this implies the implementation of parallel reforms to supplement its operation. It requires ultimately the reintroduction of a competitive market for investment goods. This would act to discipline management, by providing an unambiguous mechanism for detecting and punishing failure. Furthermore, unemployment would be necessary to discipline the workforce. The combination of these two elements would allow the full generalisation of the experiment and would stop its modification and dissipation. As previously suggested, the likelihood of this type of reform is remote. The widescale reintroduction of unemployment would be politically destabilising and to encourage a mechanism that unequivocally identifies enterprise failure would be resisted both by enterprise management, whose precarious position would be made more vulnerable and by ministries, who are ultimately responsible. What is being suggested is that even if the ultimate creation of a market socialist model in the USSR were in the interests of perhaps the majority of enterprise management and some sectors of the workforce (those who are not unemployed or whose intensity of work has been increased or who occupy a lowly position in the necessarily unequal distribution of income), once it exists, the transition towards it, will be resisted because potentially it is in no-one's interest. No individual manager or worker can be guaranteed that he will not be either a failure or unemployed. Therefore, it is more

rational to maintain the imperfect present situation than risk the uncertainties of the future.

Gorbachev's analysis of the problems, outlined in his early speeches, whilst perhaps allowing increasing debate on market forms and pressing for greater individual responsibility does not appear to include the market socialist option (20). The antagonistic social relations of production which made the Shchekino experiment necessary also make it impossible for it to succeed, either in its present form or in a necessarily more radical variant.

Gorbachev has however, pressed for further extension of the brigade system (21). Based upon the analysis presented in Chapter 5, this is hardly likely to be the cure-all that some Soviet sources suggest (22). Firstly, there are doubts about the suitability of the system for all areas of production. It may well be an appropriate form for construction or agriculture but in its full khozraschet form it is inapplicable in modern integrated plants. Secondly, the introduction of new 'administrative' means of control, the hierarchy of brigade leaders etc., alongside all the other internal enterprise bodies, appears as a duplication and further bureaucratic encumbrance. Once again in times of technological change what is necessary is a form of control that simplifies rather than complicates the economic mechanism. Thirdly, to talk of the brigade system in terms of democratisation of the workplace is simply misleading. The brigade structure and its leadership

could be viewed as a more comprehensive system of 'foremanship'. Gorbachev for example, has described brigade leaders as 'executives on the shop floor' (23). The brigade system is not a mechanism for workers' control but a means to more closely control the Soviet workforce. The ultimate logic of the brigade system is to further fragment internal factory relations, which directly contradicts the logic of the development of the productive forces.

Therefore, given the relative failure of the experimental initiatives we may expect the emergence of new experiments in labour control. This may well be supported by the re-promotion of the older initiatives and attempted combinations of both new and old forms. The early signs from the new leadership are precisely of this type. The reform initiatives will probably originate in particular problem areas like the Chemical industry, construction, machine tools and robotic equipment production etc. It is also to be expected that these reform initiatives will be supplemented by further legislative changes, in the area of labour laws and labour discipline. The logic of what has been developed in this thesis suggests that any new experiments or re-promotions of old initiatives will lead to a similar cycles of growth and decline.

In conclusion the experience of the Shchekino experiment and the other experimental initiatives suggests that the transition to any market socialist model in the USSR will be extremely difficult. The experiments rather than

establishing any spontaneous dynamic in this direction were resisted both by workers and enterprise management. The experience suggests that the introduction of partial market-based forms of control will fail if the whole structure of market relations are not introduced, which in return would be resisted by most sectors of the Soviet population. I would argue that as long as the direct producers are excluded from control over their work-time and as long as production is not controlled by the needs of the direct producers, the possibility of crisis, expressed either in 'labour shortage' or 'labour surplus', are the only two alternatives open to the Soviet ruling group. Labour shortage, based upon the existence of the negative control of the workforce, ultimately threatens the reproduction of the ruling group. Labour surplus, based upon forms of market control, may be more desirable but is politically impossible to introduce. This is the nature of the impasse that the Soviet ruling group faces.

FOOTNOTES TO CHAPTER 6.

1. See E.Preobrazhensky, "The New Economics", Oxford, 1965.
2. See H.Ticktin, "The Class Structure of the USSR", Critique No.9, op.cit., pp.52-55.
3. For an excellent account of this period see S.Schwarz, "Labour in the Soviet Union", New York, 1953.
4. See for example the evidence cited throughout I.Krawchenko, "I Chose Freedom", London, 1947.
5. For the historical origins of negative control see D.Filtzer, "The Soviet Worker in the 1930's", Critique No.17, 1985.
6. J.Berliner, "Prospects for Technological Progress", in "Soviet Economy in a New Perspective", op.cit., pp.431-433. See G.Sorokin, "Zakonomernosti sotsialisticheskoi intensivifikatsii", Voprosy Ekonomiki, 1982, No.10, p.108; L.Abalkin, op.cit., p.3; G.Kulagin, op.cit., p.101.
7. V.Belotserkovsky, "Workers' Struggles in the USSR in the Early Sixties", Critique, No.10/11, pp.47-49.
8. See Chapter 2.
9. See any of the articles by Aganbegyan, Bunich, Sonin, Manevich or Valavoi already cited.
10. T.Zaslavskaya, "The Novosibirsk Report", with an introduction by P.Hanson, in Survey, 1983, pp.83-108.
11. See Belotserkovsky, op.cit., pp.44-46.
12. It is important to differentiate between reform initiatives. Krushchev's reforms were attempts to administratively modify the Stalinist system. Kosygin's reforms were aimed primarily at the web of relationships between planning agencies, ministries and enterprises. See G.A.E.Smith, "The Political Economy of the Soviet Reforms", Critique, No.4, pp.27-43.
13. See Zaslavskaya, op.cit., pp.88-90.
14. Yu.Andropov, Pravda 23/11/82, pp.1-2;
15. Pravda, 19/6/83, p.1.
16. Rutland, op.cit., p.361.
17. See Valavoi, Nikitin, Shvetsov, op.cit., p.3.
18. G.Popov, Pravda, 27/12/80, p.3.
19. Ibid., p.3.

20. M.Gorbachev, Pravda, 12/3/85, p.3; Pravda, 17/3/85, p.1.

21. M.Gorbachev, Pravda, 12/4/85, pp.1-2, where he notes the need for more workers to be organised in brigades; brigades, once established to be transferred more rapidly to khozraschet; for the brigades already in operation to achieve higher labour productivity increments; and he calls for the avoidance of wage levelling within brigades.

22. See for example the contributions to Shurueva (Ed), op.cit.

23. Gorbachev, op.cit., p.1.

The analysis presented in Chapter 2 suggests that the decline in Soviet economic growth can be explained by reference to the antagonistic nature of production relations and the absence of any unambiguous form of economic regulation. The impact of labour discipline problems has been recognised by many of the Soviet sources cited and the Soviet leadership but this has been disputed by western commentators (1). Hanson for example, suggests that increasing labour discipline will not lead to any significant improvement in economic performance (2). The reason he advances for this is that the effects of labour discipline infractions, when they emerge in surveys appear relatively small. Hanson's argument is that it is imperfections in the planning system that lead to low shift coefficients, considerable idle-time and poor utilisation of fixed capacity (3). This argument requires closer examination.

Given the problems already cited with regard to mechanising production it is particularly important that existing equipment is fully utilised, especially in Department 1 industries. This will not only raise output but enable the production of more mechanised equipment and lead to the freeing of manual workers thereby easing the apparent labour shortages. The problems of the machine building industry make it desirable to be able to identify causes of idle time and under-utilisation in that industry. The

TABLE A1.

Utilisation of Productive Metal Working Equipment in Enterprises of the Machine Building Ministry.
(Based on data for the 24 hours of 19/5/82.)

	A*	B*	C*	D*
A. All Metal Working Equipment	14.7	1.33		
In Basic Production	14.1	1.41	10.7	9.9
In Aux. Production	15.9	1.16		
B. Metal Cutting Lathes	14.5	1.32		
In Basic Production	14.0	1.39	10.3	9.9
In Aux. Production	15.6	1.17		
Of Lathes in Basic Production				
Numerically Controlled	15.3	1.41	8.9	10.2
Automatic Lines	8.9	1.71	9.2	12.2
C. Forge Pressing Machines	14.8	1.40		
In Basic Production	14.4	1.44	12.1	10.0
In Aux. Production	17.5	1.13		
Automatic Lines	15.4	1.61	13.9	10.9
D. Casting & Moulding Equipment	14.6	1.65		
In Basic Production	14.5	1.66	9.7	11.7
In Aux. Production	17.0	1.40		
E. Electrical Welding Equipment	15.7	1.26		
In Basic Production	14.7	1.34	10.5	9.5
In Aux. Production	18.0	1.07		

A* Non-Working Equipment as a % of the Total.

B* Shift Co-efficient.

C* Intra-Shift Downtime as a % of the Total.

D* Worked Tool-Hours per unit of set-up Equipment in 24 hour period.

survey that Hanson cites is reproduced in part in this appendix (4).

Table A1, identifies the percentage of non-working time for metal-working equipment in the machine building industry and the relevant shift coefficients. Five points emerge. Firstly, the average shift coefficient is 1.33 (out of a maximum possible value of 3) which is well below the 1.7 deemed desirable by Soviet sources. Secondly, the shift coefficient is declining over time. In the mid-seventies shift coefficients were in the range 1.36 to 1.56, with an average of 1.41 (5). Thirdly, as Bunich has pointed out, if shift coefficients are so low why are plans fulfilled and indeed over-fulfilled (6). Fourthly, the proportion of idle-time for each category of equipment is higher in auxiliary production (15.9% on average) than for basic production (14.1% on average) with consequent effects on shift coefficients. This supports the point made earlier with regard to problems in auxiliary production. Fifthly, where automatic lines are identified shift coefficients are not appreciably better (in one instance the percentage of idle-time is below average and the shift coefficient is marginally above 1.7). Kulagin argues that with automatic equipment and lines the shift coefficient has to approach 3 to justify the expenditures involved (7).

The following three tables identify the reasons for idle-time in three categories; Table A2, whole day losses; Table A3, whole shift losses; Table A4, intra-shift losses.

TABLE A2.

Reasons for Idle-Time in Basic Production. (%)

Quantity of Equipment Idle for 24 hours	A	B	C	D
Planned Repair & Modernisation	15.1	18.6	26.5	17.5
Reserves & Temporarily Unutilised	9.3	6.9	15.0	12.8
Superfluous Equipment	3.9	2.7	2.2	3.1
Defective & Unplanned Repair*	10.9	14.0	15.8	12.1
Lack of Productive Work*	9.3	11.4	7.3	12.0
Below Staff Complement*	26.3	23.1	16.1	21.0
Lack of Workers for Administratively Sanctioned Reasons	6.7	4.9	3.4	5.2
Shirking*	0.2	0.1	0.1	0.2
Deficiencies in Raw Materials, Stocks, Machine Parts, Materials*	9.1	8.6	4.7	7.1
Deficiencies in Instrumentation, Technical Documentation, Energy Sources, Transport, Lifting Equipment etc.*	2.2	2.9	2.5	1.6
Deficiencies in Computing Equipment*	0.2	- -	- -	- -
Other Whole Day Losses.*	6.8	6.8	6.4	7.4

- A = Metal Cutting Lathes.
 B = Forge Pressing Equipment.
 C = Casting & Moulding Equipment.
 D = Electro-Welding Equipment.

TABLE A3.

Reasons for Idle-Time in Basic Production. (%)

Quantity of Equipment	A	B	C	D
Idle for Whole Shift.	100	100	100	100
Planned Repair & Modernisation	7.6	9.7	11.4	9.3
Defective & Unplanned Repair*	9.8	11.8	14.6	10.5
Lack of Production Tasks*	11.9	13.0	12.9	14.5
Below Staff Complement *	39.5	35.5	29.9	34.2
Absence of Workers with				
Administrative Sanction	8.5	7.0	6.5	6.8
Shirking*	0.3	0.2	0.7	0.2
Deficiencies in Raw Materials.				
Stocks, Machine Parts, Materials*	9.1	8.7	7.9	9.0
Deficiencies in Instruments, Technical				
Documentation, Energy Sources,				
Transport & Lifting Equipment.*	3.1	3.4	2.9	2.4
Other Whole Shift Losses .*	10.2	10.7	13.2	13.1

- A = Metal Cutting Lathes.
B = Forge Pressing Equipment.
C = Casting & Moulding Equipment.
D = Electro-Welding Equipment.

TABLE A4.

Reasons for Idle-Time in Basic Production. (%)

	A	B	C	D
Intra-shift Losses	100	100	100	100
Defective & Unplanned Repair*	16.9	16.9	26.1	14.0
Adjustment & Readjustment of Equipment	18.5	22.7	15.6	13.5
Deficiencies in Raw Materials*				
Stocks, Machine Parts, etc,	21.5	17.9	21.8	22.1
Deficiencies in Instrumentation,* Technical Documentation, Energy Sources, Lifting & Transport Equipment.	7.5	7.5	9.2	10.3
Deficiencies in Production Tasks*	9.7	11.3	6.8	12.2
Absence of Workers with Administrative Sanction	6.6	5.9	5.0	5.6
Deficiencies Caused by Labour Discipline Violations.*	1.8	1.1	2.3	1.9
Other Intrashift Losses.*	17.5	16.7	13.2	20.4

- A = Metal Cutting Lathes.
 B = Forge Pressing Equipment.
 C = Casting & Moulding Equipment.
 D = Electro-Welding Equipment.

Hanson is formally correct to point out that losses directly attributable to infractions of labour discipline or shirking are very small; 0.1 to 0.2% on Table A2; 0.2 to 0.7% on Table A3; 1.1 to 2.3% on Table A4. These figures are broadly comparable to those cited from Sonin earlier but it should be remembered that he argues that these under-report losses by as much as 10 times (8).

However, leaving this last point aside, the major reason for idle-time clearly emerges on both Table A2 and A3, as being as a result of shortages of workers in a variety of shops; 16.1 to 26.3% of the idle time on Table A2 and 29.9 to 39.5% on Table A3. Hanson correctly points out that the blame for this cannot be attributed to Soviet mothers for not producing sufficient children. However, he explains this disparity as being the consequence of inadequacies in the planning system. His failure to explain the cause of these inadequacies and his narrow conception of labour discipline problems results in a technical explanation of a socio-economic problem. Presumably for Hanson, these problems would be resolved if planning mechanisms were more efficient.

However, I would argue that this explanation is inadequate. As Section 7, of Chapter 2 sought to explain, the apparent labour shortage is the result of the contradictions of the socio-economic system and these are reproduced over time and are not the result of technical failures. If a broader perspective is taken that sets the problems of production into the context of the antagonism between the worker and

the ruling group then a significant proportion of the idle-time can be explained as a result of labour discipline problems either directly or indirectly.

The lines marked with an asterisk on Tables A2 and A3 represent problems directly attributable to the antagonistic nature of the system. Planned repair is excluded as it is a necessary part of any production process. Administratively sanctioned absences are also excluded although this is more debatable, as suggested in Chapter 2 this is often a result of management compensating workers for the poor rhythm of production etc.

In the figures produced below, the first figure includes the category "other causes" and the second excludes this proportion of idle-time. Without more information nothing definite can be said about these time losses. If the totals are recalculated they read as follows;

<u>Table A2:</u>	A = 65%, 58.2%;	B = 66.9%, 60.1%;
	C = 52.9%, 46.5%;	D = 61.4%, 54.0%.
<u>Table A3:</u>	A = 83.9%, 73.7%;	B = 83.3%, 72.6%;
	C = 82.1%, 68.9%;	D = 83.9%, 70.8%.

A similar situation arises with Table A4, but here the only element excluded is the adjustment and resetting of equipment. Again this could be questioned on the grounds that lack of sufficient specialised equipment and the consequent use of general purpose equipment, is a systemic failing.

Table A4: A = 81.5%, 64%; B = 77.3%, 60.6%;
 C = 84.4%, 71.2%; D = 86.5%, 66.1%.

This figures suggest that the responsibility of labour discipline infractions for idle-time are much more significant than Hanson suggests. It really depends upon how you view the nature of planning, either as a technical operation or as a reflection of the political economy of the USSR.

There are two further tables in the original article, which have not been reproduced here. The first considers the level of idle-time across industries and indicates that there is little variation with an average of 14.1% idle time and a shift coefficient of 1.41 (9). The second table, adds a regional dimension to this and shows significant regional variations in idle-time, (from a low of 9.8% to a high of 32.6%) and shift coefficients (from a high of 1.54 to a low of 0.82) (10).

The general point to be drawn from this is that the contradictory nature of the system leads to under-utilisation of fixed capacity in this important branch of the economy. The labour shortage and poor planning are not the causes of this but are manifestations of deeper problems.

FOOTNOTES TO APPENDIX

1. See for example, E.Teague, "Workers' Control or Workers Controlled", Workers Under Communism, 1983, No.4, p.23.
2. P.Hanson, "Labour Discipline and Production Stoppages in the Soviet Industry", RL 200/83.
3. Ibid., RL 200/83.
4. Vestnik Statistiki, 1983, No.4, pp.68-70.
5. V.Silin and A.Sukhov, "Rezervy Effektivnosti", Planovoe Khozyaistvo, 1977, No.4, p.98.
6. P.Bunich, "Ekonomicheskoe stimulirovanie vysokikh rezul'tatov", Ekonomika i organizatsiya promyshlennogo proizvodstva, 1984, No.2, p.5.
7. G.Kulagin, "O putiakh intensifikatsii(iz bloknota ekonomista)", Planovoe Khozyaistvo, 1983, No.4, p.105.
8. See Chapter 2, Footnote 190.
9. Vestnik Statistiki, op.cit., p.70.
10. Ibid., p.70.

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